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ARTICLE VI.

Collections towards a Flora of the Territory of Arkansas. By Thomas Nuttall. Read before the American Philosophical Society April 4, 1834.

CRYPTOGAMIA.

OF SPORADIA. Gemmule and perfect plant consimilar; sexual organs and flowers heteromorphous and inconspicuous; cotyledons none.

FUNGI.

1. *FULIGO flava.* 2. *F. cinnabarina.* 3. *F. *coccinea.*—*Hab.* The trunks of *Cupressus disticha.*

1. *TRICHIA botrytis.* 2. *T. vulgaris.* 3. *T. reticulata.*

FILICES.

OPHIOGLOSSUM vulgatum.—*Hab.* Near the town of Arkansas.

1. *BOTRYCHIUM fumarioides.* 2. *B. obliquum.*—*Hab.* Of frequent occurrence in shady woods.

1. *OSMUNDA spectabilis.* 2. *O. cinnamomea.*—*Hab.* Near springs on the banks of Arkansas and Red rivers, but not common.

1. *POLYPODIUM vulgare.* 2. *P. incanum.*—Common.

1. *ASPIDIUM acrostichoides*. 2. *A. marginale*. 3. *A. Filix femina*.
 1. *ASPLENIUM rhizophyllum*. 2. *A. angustifolium*. 3. *A. ebe-*
neum. 4. *A. melanocaulon*. 5. *A. Ruta muraria*.

PTERIS aquilina.

WOODWARDIA virginica.

ADIANTUM pedatum.—*Hab.* Near the Petit Gulf on the banks of the Mississippi.

CHEILANTHES vestita.—Common.

PILULARIA.

MARSILEA * Remotely allied to the Ferns. Natural affinity unknown.

AZOLLA Americana.

EQUISETUM hyemale.—*Hab.* Forming extensive and exclusive fields on the banks of the Ohio, Missouri, Mississippi and Arkansas rivers.

CHARA vulgaris.

PHÆNOGAMIA.

Or SEMINIFERA. Germinal rudiments and succeeding vegetation dissimilar; sexual organs and flowers conspicuous.

ACOTYLEDONES.

NAIADES.

1. *LEMNA minor*. 2. *L. polyrhiza*.

1. *CALLITRICHE verna*.

2. *C. *pedunculosa*, foliis omnibus ellipticis, enerviis; fructibus pedunculatis, declinatis.—*Hab.* (In depressed situations, and on the margin of ponds, attached to the ground) from Arkansas to the Pottoe, &c.—*Obs.* Leaves cuneate-elliptic, thickish and covered with impressed punctures; flowers axillary and opposite, monoicous, one of them staminiferous; calix and corolla none? (at least I could not discover any); stamens not exerted; styles two, for a while persistent on the summit of the pedunculated fruit; seeds four, compressed; time of flowering, February.

3. *C. *peploides*, subcæspitosa; foliis omnibus ellipticis; fructibus sessilibus.—*Hab.* On the banks of the Mississippi, and on the margins of ponds. This species differs from the preceding by the greater minuteness and sessile posture of the fruit; the stems are also perfectly erect. It cannot well be confounded with the heterophyllous and floating species, as it shows no tendency to either one or the other. The great extent of its geographical distribution, every where along the banks of the Mississippi and the neighbouring ponds, proves it to be no transient or local variety, influenced by peculiar circumstances.

CERATOPHYLLUM submersum?

1. *MYRIOPHYLLUM spicatum.* 2. *M. heterophyllum.* 3. *M. scabratum.*—*Obs.* Fruit with eight furrows, and the ridges muricate.

PROSERPINACA palustris. The quadrature of the parts of fructification which frequently happens in this genus, besides the great similarity of habit, renders it inseparable in order from *Myriophyllum*.

1. *POTAMOGETON natans.* 2. *P. heterophyllum.*

Obs. The genera *Myriophyllum*, *Ptilophyllum* and *Proserpinaca* (probably terminating with two cotyledons) would, perhaps, have been more properly arranged with the first section of the *Onagrae* of Jussieu. *Proserpinaca* has been heretofore associated with the *Hydrocharideae*.

AROIDEAE.

SAURURUS cernuus.—*Obs.* Stamens on the lower, and as far as above the middle of the spike, eight, seven and six, uppermost flowers often producing only four. This genus is collated with the *Peperomia* of Ruiz and Pavon, and we cannot perceive any sufficient reason for excluding the genus *Piper* from this natural association. The only obstacle appears to be the quadrature of the germs in *Saururus*, which, however, precisely agrees with the increased number of stamens, eight in place of two, and so four fruit in place of one. The sensible taste and aroma of *Saururus* is similar to that of *Acorus calamus*.

1. *ARUM triphyllum.* 2. *A. dracontium.*—*Hab.* Near the Cadron settlement.

Neither *Symplocarpus* nor *Orontium* appears to the west of the Alleghany mountains.

ACORUS calamus.—*Hab.* From the town of Arkansas to the Pecanerie settlement.

TYPHA latifolia.

CYPEROIDEAE.

1. *CAREX rosea*. 2. *C. tentaculata*. 3. *C. lupulina*. 4. *C. flava*.
5. *C. folliculata*. 6. *C. plantaginina*. 7. *C. anceps*, &c.

SCLERIA reticularis.

FUIRENA squarrosa.—*Obs.* The root in winter becomes bulbous.

SCIRPUS trichodes. 2. *S. palustris*. 3. *S. lacustris*. 4. *S. quadrangulatus*.—*Rare*. 5. *S. autumnalis*.

1. *RHYNCHOSPORA alba*. 2. *R. longirostris*.

1. *SCHOENUS setaceus*. 2. *S. effusus*.

1. *MARISCUS retrofractus*. 2. *M. echinatus*.

1. *CYPERUS poaeformis*. 2. *C. pygmaeus*, Cavan. ic. 6, p. 65, t. 568, f. 2; *C. uncinatus Ph.*—Scarcely distinct from *C. squarrosus* of India.
3. *C. brizaeus*. 4. *C. flavescens*. 5. *C. hydra*. 6. *C. flavicomus*.
—*Obs.* The roots of several of these species become fragrant when dried.

KYLLINGIA pumila.—*Hab.* Banks of the Mississippi.

GRAMINEAE.

LIMNETIS cynosuroides.

GREENIA.* Calix coriaceus, oblongus, bivalvis, uniflorus; corolla inclusa, bivalvis; valva exterior sub apice integra aristata; perisporium bipartitum. Panicula multiflora, subracemosa; stipulis membranaceis.

G. Arkansana. Root fibrous, annual? Culm about twelve to eighteen inches high; leaves short and narrow, often pubescent; stipules membranaceous; panicle slender, partly racemose. Calix indurated; valves oblong, scabrous, semiterete and acute, awnless, including the corolla; valves of the corolla linear-oblong, acute, naked at the base; the exterior awned below the summit, which is entire; awn at first straight, about twice the length of the corolla, spirally twisted by desiccation, persistent.

* In honour of B. D. Greene, Esq. well known as an assiduous botanist.

Allied to *Oryzopsis*.—*Hab.* On the calcareous hills in the grassy plains of Red river. Flowering in May.

1. *MUHLENBERGIA diffusa*.—Called nimble-will, and considered as an important pasture-grass in Kentucky and Tennessee. 2. *M. erecta*.

1. *AGROSTIS tenuiflora*. 2. *A. stricta*.

3. *A. arachnoides*, Elliott. Panicula patente, capillari; floribus binatis, glabris; corolla, arista dorsali tenuissime capillacea longissima; foliis brevibus planis.—*Hab.* In the open and elevated prairies of the Arkansas. Flowering in April and May.—*Obs.* Culm about a span in height; branchlets of the panicle few-flowered, capillary and flexuous; flowers aggregated towards the summits of the branchlets, commonly purple and somewhat shining; calix lanceolate, the carina scabrous; corolla 2-valved, a little shorter than the calix; awn of the dorsal valve about four times its length, appearing like a flaccid silken hair; anthers three. This very curious grass, which occurs sometimes according to Mr Elliott with a single stamen, appears to be somewhat allied to the genus *Jarava*.

4. *A. decumbens*. 5. *A. vulgaris*. 6. *A. clandestina*.—*Obs.* This appears to be the *Panicum clandestinum* of Persoon. 7. *A. Indica*.—*Hab.* Banks of the Mississippi, as far as New Orleans.

1. *TRICHODIUM laxiflorum*. 2. *T. decumbens*.

CINNA arundinacea.

1. *CALAMAGROSTIS Canadensis*.

2. *C. *gigantea*. Panicula pyramidata, ramis multifloris; calicibus lanceolatis membranaceis corolla mutica breviori, valvulis inaequalibus.—*Hab.* On the sandy banks of Great Salt river of the Arkansas.—*Obs.* The great magnitude and general aspect of this species might justly entitle it to the common appellation of a reed, notwithstanding the calix containing only a single flower. They grow also in considerable quantities together. The culm, of a proportionate thickness, often attains the height of six feet. The leaves, which are smooth, are considerably attenuated towards the point; the stipules are a mere margin of dense hairs. The panicle is sometimes nearly as much as a man can fathom, consisting of many effuse branches, forming a pyramidal panicle. The flowers are somewhat racemously aggregated by pairs; the valves of the membranaceous calix are lanceolate, unequal

in length, perfectly smooth, and each furnished with a single nerve terminating somewhat acutely; the corolla is altogether similar, except that the valves are somewhat pubescent on the back, and the base furnished with the conspicuous wool of *Arundo*.

POLYPOGON racemosum.

ALOPECURUS geniculatus.

*PHALARIS *occidentalis.* Panicula spiciformi, ovata; glumis carinatis lanceolatis integris glabris; corolla 4-valvi; valvulis exterioribus subulatis, interioribus villosis.—*Hab.* In partially inundated prairies, from fort Smith on the Arkansas to Red river. Flowering in May.—*Obs.* Annual. Culms fasciculated, about twelve inches high; root fibrous; leaves four or five, broad lanceolate, acute, pale green and smooth, but scabrous along the margin; stipules membranaceous, lacerate; spike solitary, terminal, at first included in a ventricose sheath, cylindric and smooth; glumes of the calyx exceeding the corolla in length, navicularly compressed and pungently acute, of a texture partly hyaline, with green veins, the keel a little hispid; corolla ovate, acute, pubescent, 4-valved, the exterior valves minute and subulate. Nearly allied to *P. canariensis*, of which it possesses the entire aspect, but the flowers and seeds are very much smaller, and indeed altogether distinct. Doctor B. D. Greene found this species in Cuba, and Doctor Little discovered it in the vicinity of New Orleans.

1. *PANICUM crus-galli.* 2. *P. gibbum*, Elliott. 3. *P. geniculatum.* 4. *P. anceps.* 5. *P. hians.* 6. *P. virgatum.* 7. *P. latifolium.* 8. *P. pauciflorum.* 9. *P. multiflorum.* 10. *P. pubescens.* 11. *P. ciliatum.* 12. *P. microcarpon.* 13. *P. angustifolium.* 14. *P. capillare.* 15. *P. agrostoides.*

Obs. The *Panicum milium* and *P. Italicum* deserve to be cultivated in the warmer states and territories of the union, particularly where wheat is found not to succeed, as is the case in the Arkansas territory, and as I have understood also in the warmer parts of Tennessee or Kentucky. In Africa and tropical America the *Panicum jumentorum*, called Guinea grass, is also an object of cultivation.

PENNISETUM glaucum.

ORTHOPOGON parvifolium. Vide Appendix to Nuttall's Genera of American Plants.

1. *DIGITARIA sanguinalis*. 2. *D. filiformis*.

CYNODON dactylon.—*Hab.* Banks of the Mississippi, near Fort Adams and Natchez.

1. *PASPALUM setaceum*. 2. *P. laeve*. 3. *P. purpurascens*, Elliott.
4. *P. *racemosum*, villosum; spicis alternis, brevibus, culmo appressis; rachi pilosa immarginata; floribus bi-seriatis.—*Hab.* The grassy plains of Red river. Flowering in June.—*Obs.* Perennial; leaves short, narrow and softly pubescent; culm somewhat naked, eighteen inches to two feet high; spikes about five, disposed in a simple raceme; rachis without margin; clavellate receptacle of the flowers pilose; calix villous, outer valve 5-nerved.

5. *P. stoloniferum*.—*Hab.* Inundated banks of the Arkansas and Mississippi.

CENCHRUS tribuloides.

TRIPSACUM dactyloides. A common grass throughout the plains of the Arkansas territory, and an important nutriment to cattle. This species is not apparently distinct from the monostachyon, as there are all gradations, from one to several spikes.

1. *STIPA avenacea*. 2. *S. parviflora*. 3. *S. sericea*.

1. *ARISTIDA stricta*. 2. *A. oligantha*. 3. *A. dichotoma*. 4. *A. pallens*.

5. *A. *purpurea*. Panicula erectiuscula gracili; cal. valvulis remotis aristulatis apice bifidis; aristis capillaribus longissimis; foliis brevibus scabris.—*Hab.* On the grassy plains of Red river, in arid situations. Flowering in May.—*Obs.* Perennial; leaves narrow, short and scabrous; ligula pilose; culm about one foot high; panicle many flowered, a little spreading, branches capillary; flowers commonly in pairs (after the manner of the genus), bluish purple; one valve of the calyx nearly double the length of the other, both bifid at the summit and shortly awned, the longer valve exceeding the corolla; awns equal, capillary, nearly three times the length of the corolla and scabrous; corolla minutely stipitate.

AIRA obtusata, Mich. (*A. mollis*, Muhlenberg).

URALEPSIS aristulata.—On all the sand-bars of the Arkansas; common.

1. *POA pratensis*. 2. *P. annua*. 3. *P. viridis*. 4. *P. nemoralis*,

β debilis. 5. *P. fluitans*. 6. *P. capillaris*.—*Obs.* The whole plant asperate; lower spikelets 3 to 6-flowered, upper ones bearing from 10 to 12; the base of the branchlets tumid and pilose; leaves much shorter than the culm; spikelets purple. Is the *P. hirsuta* of Michaux essentially distinct from this species?

7. *P. *trichodes*. Glabra; panícula maxima elongata, capillari; spiculis laxis lanceolatis planis 3—8-floris acutis; feliis longissimis. Perhaps *P. tenuis* of Elliott.—*Hab.* In bushy prairies and open alluvial lands.—*Obs.* Perennial; three to four feet high; leaves very long and rather broad, smooth, occasionally pilose at the orifice of the sheath; stipules none; panicle one to two feet long, innumerably branched, capillary, divided; spikelets smooth, upon long pedicells; the lower ones 3 or 4-flowered, the upper with 8; calix and corolla carinate, very acute and smooth, almost membranaceous; florets not crowded nor tomentose at the base; dorsal valve 3-nerved; stamens three, pale coloured.

8. *P. conferta* (*P. glomerata*, Walter, not of Linnæus).—On the inundated banks of the larger rivers. 9. *P. parviflora*. 10. *P. eragrostis*.

11. *P. *interrupta*. Panicula laxa, interrupta; spiculis glomeratis, subsessilibus, oblongo-lanceolatis, compressis, multifloris (8—16), valvulis acutissimis; foliis angustatis.—*Hab.* In bushy prairies, near the sandy banks of the Arkansas; common.—*Obs.* Perennial; plant glaucous; leaves narrow; ligula pilose, obsolete; culm twelve to eighteen inches; branches of the panicle somewhat remote and divided, partly erect; spikelets conglomerated, carinately compressed, appearing serrated; valves ovate, acute, 3-nerved (after the manner of this section of the genus, which I have elsewhere termed *Brizoma*). A very elegant and well characterized species. Flowering in June.

12. *P. pilosa* (*P. tenella*, Elliott and Nuttall; *P. pectinacea*? Michaux). 13. *P. hypnoides*.—Abundant and common along the inundated banks of the Mississippi. 14. *P. reptans*.

15. *P. *capitata*. Dioica, viscido-pubens; culmo reptante; panícula foeminea subrotunda lobata obtusa, mascula conferta; spiculis subduodecemfloris, lanceolatis; foliis distichis brevibus.—*Hab.* On the sand-beaches of the Arkansas. Flowering in July.—*Obs.* Allied to

P. reptans, but remarkably distinguished by its conglomerated and almost capitate panicles, which give it almost the appearance of *Crypsis aculeata*. Annual and pilose; culm prostrate, diffusely branched, striking root at the nodes; leaves lanceolate and very acute, distichal, about two inches long; sheaths very short; stipules obsolete, pilose; female flowers spiked, the spikes subcapitate and lobed; male panicle acute, the spikelets less crowded, compressed, larger than those which are styliferous, and all 3-nerved after the manner of this section, with which it arranges.

1. *WINDSORIA poaeformis* (*Poa sesleroides*, Michaux).

2. *W. *stricta*. Panicula subspicata, stricta, multiflora; calicibus acuminatis, spiculis subquinquefloris paulo brevioribus.—*Hab.* In prairies, near the town of Arkansas.—*Obs.* Perennial; leaves long and smooth; stipules pilose; culm about two feet high, rigid, 1 or 2-jointed; panicle six to eight inches long, crowded with numerous and short branchlets, appressed to the culm so as almost to resemble a spike. Calix acuminate, nearly the length of the spikelet; each valve with a single nerve or vein; dorsal valve of the corolla (as usual) densely villous along the lower margins and back, subtricuspidate, the central cusp alone conspicuous.

DANTHONIA spicata.

1. *FESTUCA tenella*, β **glauca*, culmis numerosis foliosis.—*Hab.* Fort Smith. 2. *F. elatior*. 3. *F. polystachia*. 4. *F. diandra*. 5. *F. fluitans*.

6. *F. *sciurea*. Panicula spicata elongata; calicibus subæqualibus 5—7-floris; floribus pubescentibus longissime aristatis; foliis setaceis brevissimis.—Arkansas.

1. **DIACHROA*. Corolla carinata, substipitata, membranacea; valvula exteriori sub apice aristata, dorso margineque utrinque barbata.

2. *D. procumbens* (*Festuca procumbens*, Muhlenberg).—*Obs.* Annual. Culm prostrate, compressed, smooth, the panicle ascending; leaves scabrous, long and attenuated; stipules membranaceous, lacerated; panicle partly included in the leaf-sheath, the rachis scabrous and angular, branches undivided and rigid, also angular; spikelets alternate, sessile, crowded; calix 2-valved, 8 to 9-flowered, valves unequal, acute, 1-nerved; corolla 2-valved, æruginous-purple; dorsal valve cari-

nated, 3-nerved, shortly awned, sericeously ciliated towards the base; florets stipitate, the stipe sericeous; stamina three; anthers small, pale yellow; stigmas white, filiform and simply plumose.—*Hab.* On the sands of the ocean, along the sea coast of New Jersey, &c., and on the sand-bars of the Arkansas for more than a thousand miles. The whole aspect of this plant is at variance with *Festuca*, and it ought, apparently, to constitute a distinct genus.

1. *KOELERIA tuberosa?* Persoon (*Aira cristata*, Smith).—*Obs.* Root perennial, fibrous; leaves smooth or pubescent; stipules membranaceous; panicle in the form of a spike, from four to six inches in length; rachis pubescent; flowers crowded; calix oblong, 2 to 3-flowered, greenish and shining.—*Hab.* On the plains of Arkansas and Red rivers.—Common. *K. nitida*, Nuttall's *Genera Am.* vol. 1, p. 74.

2. *K. paniculata*, Nuttall's *Gen. Am.* Appendix. (*Aira truncata*, Muhlenberg; *Aira obtusata*, Elliott, not of Michaux?)

BROMUS purgans (B. *ciliatus*, Lin.).—*Obs.* Leaves partly distichal.

1. *UNIOLA latifolia*. 2. *U. gracilis*.

3. *U. *multiflora*. Panicula subspicata rigida; spiculis longissimis lanceolato-linearibus numerosissime floris; culmo brevi, a basi ramosa; foliis subdistichis subulatis brevibus.—*Hab.* On the sand beaches of the Arkansas, above the garrison.—*Obs.* Perennial; culm terete, radicanant and divided towards the base; leaves alternate, distichally spreading, rather short and subulate, pale green; sheaths short, commonly pilose at the orifice; stipules obsolete; panicle spiked, branchlets short and appressed; calix 2-valved; spikelets often an inch long, and scarcely more than a line and a half wide, containing from sixteen to twenty-four florets; external corolla, valves ovate-acute, concave, opaque and smooth, numerously striate and scariose along the margin; anthers three, yellow; many of the glumes abortive of seed. This species possessés all the habit of *U. spicata*, but differs essentially by the magnitude and paucity of the spikelets. I have a specimen which I collected on the plains of the Missouri, apparently referable to this species, but the spikelets are ovate, and not more than about 12-flowered.

1. *MELICA glabra*, Mich. (*M. racemosa*, Muhl. *Gram. Descript.* p. 88).

2. *M. *scabra*. Foliis latis subpubescentibus asperis; panicula

ramosa, multiflora, ramis subsimplicibus; floribus secundis nutantibus; calicibus trifloris; floribus glabriusculis exsertis.—*Hab.* In the humid shady woods of Cedar prairie, ten miles from Fort Smith. Flowering in May.—*Obs.* Perennial. Culm two to three feet high; stipules lacerate; panicle many flowered, secund, partly branched to the summit; calix mostly 3-flowered, besides the neutral rudiment, which is pedicellate; valves ovate, obtuse and coloured, with the margin scariose; spikelets sublanceolate, the flowers being exserted beyond the calix; flower glumes striated, merely smooth to the naked eye; inner valve (seen through a common lens) pubescent along the margin, as in *M. glabra*, to which this species is proximately related; stamens three; styles two, pubescent. This species appears to be somewhat related to *M. aspera* of Barbary.

1. *MIEGIA gigantea* (*M. macrosperma*, Pursh).—Ramis floriferis, spiculis paucifloris (8—10), purpureis, glabris, acuminatis; caule fruticoso altissimo.—*Hab.* From Great Sandy river on the northern confines of Kentucky, along the alluvial borders of the Ohio to its confluence; on the banks of the Mississippi, from Kaskaskia to the Gulf of Mexico; on the borders of the Arkansas, a few miles above the Verdigris; on Red river to the L'eau Bleu; in the Atlantic states to the confines of Virginia. When, after a lapse of years, arrived at the period of flowering, it often sends up in a period of two months a stem of thirty-five or forty feet in height, which in the following year flowers and dies. This species rarely survives after being cut down, while the smaller or dwarf cane springs up again from the remaining root.

2. *M. *pumila*. Panicula radicali; spiculis pubescentibus, multifloris (12—20), valvulis longe acuminatis.—*Hab.* At the confluence of Kiamesha and Red rivers, in alluvial lands.—*Obs.* Culm three or four feet high, shrubby and slender; leaves as in the preceding, but somewhat broader; flowering panicles radical, two to three feet high, slender, and often refracted towards the summit; spikelets slenderly pedunculate, and attenuated at the base, two to three inches long and pubescent, containing from ten to twenty conspicuously acuminate or cuspidate flowers; calix small, with very unequal valves; stamina three; stigmas three; sheaths of the leaves pubescent along the margin; the orifice surrounded by setose tufts. I am not certain that this plant is

the dwarf cane commonly noticed by the colonists, which indeed appears to be nothing more than a variety of the *M. gigantea*.

CHLORIS **verticillata*. Spicis plurimis verticillatis, radiatis, filiformibus; calicibus acuminatis bifloris; flosculis longe aristatis; gluma exteriore subbarbata; caule compresso.—*Hab.* On the sandy banks of the Arkansas, near Fort Smith; rare. Flowering in June.—*Obs.* Perennial. Culm compressed, branched from the base, about twelve inches high; leaves pale green, narrowish and flat; sheaths carinately compressed; stipules obsolete, hairy; spikes mostly verticillated in two series, the first aggregation consisting of from seven to nine spikes; spikes filiform and stellately spreading, pilose at the base, about six inches long; flowers unilateral, alternating in two rows; calix acuminate, 2-flowered, one of the flowers perfect, the other neuter, the dorsal valves of both gibbous, obtuse and awned, the awn more than twice the length of the flower, that of the hermaphrodite bearded; seed triangular, smooth and even; anthers three; stigmas two, brown. There are few grasses in America more curious and elegant. Its aspect is that of the tropical species.

OXYDENIA attenuata (Eleusine sparsa, Muhl. Gram. Descript. p. 135). The *Chloris mucronata* of Michaux appears to belong to this genus, and is evidently distinct from the plant of Pursh and Muhlenberg, which has digitate spikes, is more nearly related to *Chloris*, and forms the genus *Dactyloctenium* of Willdenow and Sprengel.

ELEUSINE Indica.—*Hab.* The banks of the western rivers in the United States appear to be the only genuine locality of this intrusive grass, which, from the coast of the Atlantic to the garrison of the Arkansas, uniformly infests gardens, court yards, and in the towns even the pavements of the streets. Bearing to be trampled upon without injury, it thus occupies places where scarcely any other vegetable can subsist. As it is equally common to India, the West India islands and North America, it probably extends through both hemispheres.

1. *ATHEROPOGON aphudoides* (*Chloris curtispindula*, Michaux).—Throughout the western country in elevated prairies.

2. *A. olygostachyum*, Nuttall's Gen. Am. vol. 1, p. 78.—*Obs.* The spikes in these more perfect specimens than those which I collected in the Missouri territory, are commonly three in number, and, after the manner of the genus, alternately disposed along the rachis for a distance of about three inches, including the terminating one. This species

possesses very much the appearance of the Monocera of Elliott (*Chloris monostachya*, Mich.).

HORDEUM pusillum, Nuttall's Gen. Am. vol. 1, p. 87. The specimens which I collected in Cedar prairie, a few miles from Fort Smith, are scarcely less than twelve inches high, while those of the arid plains of the Missouri were not more than five or six.

1. *ELYMUS Canadensis*. 2. *E. virginicus*.

1. *ASPRELLA *Americana*. Spica erecta, spiculis patentibus, superioribus subunisetis.—*Obs.* In the American plant the upper spikelets are subtended by one or two longish setaceous portions of an involucre, entirely wanting in the European species.

2. *A. *angustifolia*. Spiculis pubescentibus, involucre nullum.

SPARTINA polystachya (*Limnetis polystachya*, Persoon, and apparently *L. cynosuroides* of the same). This grass, though common on the sea coast, exists in wet prairies throughout the Missouri and Arkansas territories to their utmost limits.

*ROTTBOELLIA *campestris*. Spica solitaria subcylindrica glabra; floribus subsecundis geminis sterilibus pedicellatis; valvula calycina ovata, punctata; corolla trivalvi.—*Hab.* In open grassy prairies, abundant. Flowering in June.—*Obs.* Perennial. Culm two to three feet high, smooth and erect, rarely terminating in more than a single spike; leaves narrow and rather short, commonly smooth to the naked eye; ligules minute and membranaceous; spike pedunculate, about six inches long, nearly cylindrical; rachis flexuose and scrobiculate; calix of the perfect flower consisting of one external and one internal valve; corolla of three membranaceous valves. The rudimental flower minute and neutral, its pedicell appressed to the scrobiculum of the rachis; anthers three; styles two, brown and plumose. This species appears to be allied to *R. coalorachis* of the isle of Tanna, according to the description of Forster, which is not sufficiently complete to admit of decision. It appertains to the section which, in my account of the North American genera, is termed Apogon, from their affinity to *Andropogon*. As in *R. rugosa* there described, the corolla consists of three valves.*

* By an oversight in the printing of the above mentioned book, in the fourth line of the specific description, page 84, the word "corolla," which ought to precede "3-valved," has

LEPTURUS paniculatus, Nuttall's Gen. Am. vol. 1, p. 81.—In denuded places in the open prairies; common, and rather larger than the Missouri plant.

1. *ANTHOPOGON lepturoides* (*Andropogon ambiguum*, Michaux). Racemis e basi floriferis; calicibus subbifloris; floribus nudis longe aristatis; foliis ovato-lanceolatis.—*Hab.* Near the Cadron, in open woods.—*Obs.* In the most perfect natural specimens the calix contains two flowers besides the rudiment.

2. *A. *filiforme*, racemis gracillimis superne floriferis; calicibus unifloris; valvula exteriore ad marginem barbata, arista brevissima; foliis sublanceolatis brevibus.—*Hab.* In shrubby prairies near the banks of the Arkansas. I first detected this very distinct species on the bushy margins of swamps in Sussex county, Delaware, a few miles from Lewistown, in September 1818.—*Obs.* Perennial; culm slender, below the panicle, as in the other species, rather crowded with somewhat distichally disposed leaves, which are, however, much shorter and narrower; panicle virgate, and the branchlets very slenderly filiform (about fifteen to twenty, in the preceding species often thirty), producing flowers only towards the summit; flowers minutely pedicellate, appressed to the rachis; calix acuminate, scabrous, 1-flowered; corolla glume lanceolate, the margin of the outer glume bearded; the awn scarcely half the length of the valve; neutral rudiment setiform and included.

1. *ERIANTHUS alopecuroides*. 2. *E. contortus*, Baldwyn in Elliott's Sketches Bot. Carol. p. 40.—*Hab.* On shelving rocks along the banks of the Arkansas.

1. *ANDROPOGON virginicum*. 2. *A. macrourum*.

3. *A. avenaceum*.—This species is very generally considered the

been omitted; for which casualty I conceive myself by no means deserving of the injurious sarcasms which it has occasioned. In the detailed description of the same plant I had also ventured to consider the third valve of the corolla as a neutral rudiment of a second flower, an inference which numerous analogies in the vegetable kingdom, and particularly in the GRAMINEAE, sufficiently warrant as just and accurate. In the genus *Panicum* this abortion of the sexual organs is even the essential character of the genus. But to answer every ill-natured cavil which might be brought against the descriptions of natural objects, or to expect an uniformity of conception, any more than in the characters of the objects themselves, would be attempting something more than human and only adding folly to weakness.

same as the *A. nutans*; it appears, however, to be sufficiently distinct, and occupies a more northern range. The panicle of the *A. avenaceum* of Michaux is erect and fewer flowered, the flowers are larger and the awn about half the length of that of *A. nutans*, the rufescent colour also described by Michaux is very constant and belongs to the pubescence, which in the other species is yellowish. *A. avenaceum* is the *A. ciliatus* of Mr Elliott. Although these two species differ in habit, yet they agree in structure precisely with the genus *Andropogon*. I can perceive no possible reason to refer *A. nutans* to the genus *Anthisteria*, as has been done by Persoon.

1. *LEERSIA virginica*. 2. *L. oryzoides*.

1. *ZIZANIA aquatica*. 2. *Z. miliacea*. This species is to me very rare. I first recognized it near to the Great Salt river of the Arkansas. Although there is an admixture of fertile and infertile flowers, yet the former, as in the common species, pretty generally occupy the summit of the panicle.

JUNCEAE.

1. *JUNCUS effusus*. 2. *J. bicornis*.

3. *J. *heteranthos*. (*Culmis foliosis*); foliis planis glabris, corymbo terminali prolifero, capitulis subtrifloris; foliolis calicinis exterioribus brevioribus acutis, interioribus obtusis, capsulam obtusam aequantibus; stamina tria.—*Hab.* In the woods of the Arkansas.—*Obs.* Culm slender and compressed, about three feet high; leaves very smooth, flat, longitudinally nerved and acute, scattered to the summit of the culm; panicle small, consisting of several corymbose and proliferous branchlets; flowers mostly by threes and triandrous; stamina coming out from the base of the three shorter and acute segments of the calix; seeds numerous and minute. Closely allied to *J. marginatus*.

4. *J. polycephalus*. 5. *J. acuminatus*. 6. *J. tenuis*. 7. *J. bufonis*. 8. *J. repens*.

LUZULA campestris.—*Hab.* Near the town of Arkansas.

TOFIELDIA glabra, Nuttall's Gen. Am. vol. 1, p. 235 (*T. glaberrima*? Elliott, Flor. Carol. p. 424).—*Hab.* In the prairies near Arkansas. I am by no means certain whether the plant discovered by the

late Mr M'Bride, and described by Mr Elliott, be the same with that which I found in the vicinity of Wilmington, North Carolina. The *T. glaberrima* attains the height of two or three feet, and bears a spike five or six inches in length; the petals are also oblong instead of ovate, and the styles distinct. As far as I yet know, they appear to be distinct species.

1. *HELONIAS erythrosperma*.—*Hab.* Near Arkansas, in prairies.
2. *H. angustifolia*.—Root bulbous, leaves not remarkably long; stamens exserted; anthers yellow; seeds angular, subovate.—*Hab.* Near Fort Smith.

MELANTHIUM virginicum.

1. *VERATRUM luteum*?
2. *V. angustifolium*.—*Hab.* In the woods of Arkansas and Red rivers.

PALMAE.

SABAL Adansoni (*Rhapis acaulis*, Willd. vol. 4, p. 1093). This palm first makes its appearance a few miles below the southern boundary of the Arkansas territory, along the banks of the Mississippi. There is a variety of it which forms a caudex twelve or eighteen inches above ground, bearing leaves of nearly double the usual dimensions, and a proportionably tall spadix.

SMILACEAE.

1. *SMILAX rotundifolia*.
2. *S. sarsaparilla*.
3. *S. tamnoides*.
4. *S. lanceolata*.
5. *S. herbacea*.

DIOSCOREA quaternata.

GYROMIA virginica (*Medeola virginica*, Linn.).

1. *TRILLIUM sessile*.—*Obs.* Of this species there are a northern and southern variety, which vary in their time of flowering and magnitude. β *praecox*, petals cuneate-ovate, about the length of the calix.—*Hab.* From Louisiana to North Carolina. γ *boreale*, petals lanceolate, longer than the calix, flowers later. *T. sessile*, Pursh, 1, p. 244.—*Hab.* In Pennsylvania.

2. *T. *unguiculatum*. Flore sessili, erecto; petalis ovatis, unguiculatis; calicibus reflexis; foliis petiolatis, lato-ovatis, acutis.—*Hab.*

In the shady woods on the banks of the Arkansas.—*Obs.* Leaves blotched, flowers brown, and the whole aspect, specific character excepted, that of *T. sessile*.

3. *T. *viridescens*. Flore sessili, erecto; petalis lineari-lanceolatis longissimis, calicibus patentibus; foliis sessilibus lato-ovalibus, subtus ad basin puberulis.—*Hab.* In shady woods at the Dardanelle settlement. Flowering in April.—*Obs.* Stem purple, pubescent near the juncture with the leaves; leaves large, broad-oval and acute, mostly blotched, closely sessile, beneath towards the base of the nerves pubescent; calix spreading, not reflected as in the preceding, segments ovate-lanceolate, greenish, the lower part inclining to brown, one and a half to one and three-fourths inches in length; petals lanceolate-linear, purplish-green, the claws brown, two to three inches in length; anthers linear, adnate to the filaments, which are short; germ lanceolate-ovate, the angles (after the manner of *T. sessile* and the preceding) grooved; styles three. This is, hitherto, the largest species of the genus.

UVULARIA sessiliflora.—*Hab.* Near Little Rock.

1. *SMILACINA stellata*. 2. *S. racemosa*.

1. *POLYGONATUM multiflorum*. 2. *P. pubescens*.

LILIACEAE.

1. *LILIUM superbum*. 2. *L. Philadelphicum*.

1. *ERYTHRONIUM Americanum*. 2. *E. albidum*, Nuttall's Gen. Am. vol. 1, p. 223.—*Obs.* Leaves maculate; petals white, with a yellow spot at the base, externally bluish; stigma trifold, pubescent, reflected.

SCILLA esculenta (*Phalangium esculentum*, Nuttall's Gen. Am. vol. 1, p. 219).—*Hab.* Common throughout the prairies of Arkansas and Red river.

1. *ALETRIS farinosa*. 2. *A. aurea*.

AGAVE virginica.

SPATHACEAE.

1. *ALLIUM Canadense*. 2. *A. angulosum*, β **leucorhizum*. Scapo nudo teretiusculo; foliis linearibus, subtus convexis; umbella fastigiata;

filamentis subulatis.—*Hab.* On the margins of brooks, in the prairies of Red river.—*Obs.* The plant commonly twice the ordinary size of *A. angulosum*; the flowers also white, as well as the root, which in the other is covered with dark coloured reticulated sphaecelous coatings; spatha in both 3-valved, and the cells of the capsule 1-seeded.

3. *A. ochroleucum.* Scapo nudo subtereti; foliis linearibus angustis rectis, subtus subconvexis; umbella pauciflora; corolla subcampanulata; filamentis subulatis.—*Hab.* In elevated prairies throughout the Arkansas territory.—*Obs.* Nearly allied to *A. fragrans*, the flowers also equally odorous, and the whole plant destitute of the characteristic alliaceous scent and taste; bulb covered with brown unreticulated sphaecelous coatings, similar to that of a *Scilla*; scape four or five inches high; spathe 2-valved, obtuse; flowers from six to nine in the umbell, turbinate-campanulate, greenish white, and of a delicate fragrance; the filaments subulate and simple, not flat and linear as in *A. fragrans*; the leaves not half the breadth which they attain in that species, shorter than the scape, and a little convex beneath.

YUCCA recurvifolia?—On the hills a few miles from Fort Smith.*

PANCRATIUM maritimum.—Near Arkansas.

CRINUM Americanum.—Throughout the Arkansas territory, in river marshes and wet prairies, often in great abundance, particularly near Red river.

HYPOXIS erecta.—Near the Cadron settlement.

IRIDEAE.

SISYRINCHIUM anceps.—In the prairies this plant often occurs in extensive masses with the flowers of unusual magnitude.

1. *IRIS versicolor.* 2. *I. hexagona.* 3. *I. cuprea?*

* In the Royal Botanic Garden at Paris, there was in 1814 a species of *Yucca* cultivated, called *Y. Boscii*, discovered by M. Bose in Upper Carolina, and very nearly allied to *Y. angustifolia* of the Missouri, but distinguished by its subcarinately convex leaves, which were green and not glaucous, but they were equally narrow and filamentiferous.

**NEMASTYLIS*.* Corolla hexapetala patens, tubo nullo; laciniis subaequalibus; stamina libera; stigmata sex, filiformia; capsula oblonga, truncata.—Radix bulbosa; folia ensiformia plicata; caulis uni aut pauciflorus; flores geminati; spatha bivalvis.

1. *N. coelestina* (*Ixia coelestina*, Bartram, it. 152, t. 3; Willd. Sp. pl. 1, p. 200). Caule unifloro, stigmatibus brevibus, seminibus angulatis.

Descript. Root a small and roundish tunicated bulb, covered with numerous dark brown sphacelous coats; radical leaves few, very long, ensiform and plaited, sheathing at the base; stem eighteen inches to two feet, partly terete, commonly producing a single leaf below the middle, and three or four other ones diminished to the size of sheathing bracts; the flowers (as far as I have seen) of a pale blue,† terminal and solitary; corolla superior, partly spreading, without tube; petaloid divisions oblong-obovate, nearly equal in size; stamina three; anthers linear; style one, short; stigmas three, filiform, bifid, white; capsule subclavate, oblong, obtusely 3-cornered, 3-celled, partitions medial; seeds numerous, angular and brown, a little smaller than those of the common onion. Flowering time from May to the close of June.—*Hab.* In the hilly prairies of the Arkansas territory, betwixt the sources of the Pottoe of Arkansas and the Kiamesha of Red river. First found in South Carolina by W. Bartram, whose figure appears to be very accurate.

2. *N. *geminiiflora*. Caule ramoso, ramis subtrifloris; stigmatibus longissimis; semina subrotunda.

Descript. Root a blackish tunicated bulb, covered with a great number of sphacelous coatings; scape about twelve inches high, nearly terete, 2-leaved, with one of them longer than the scape; radical leaves mostly three, equitant, ensiform and plaited, as in *Tigridia*, the central one double the length of the others (twelve to fourteen inches), the point attenuated, the colour light green, and with both surfaces nearly similar; branches of the scape mostly three, rarely two or four, subtri-

* From *νήμα* a *thread*, and *στέλος* a *column* (or the style as employed in botany). This name is chosen by way of distinction from the structure of the same organ in *Moraea*.

† Those seen by my aged friend, William Bartram, in South Carolina, were of a bright azure blue, and of greater magnitude.

quetrous, 2-flowered; spathe 2-valved, 2-flowered, one of the peduncles and spathes above the other (within the conspicuous ovate spathes are one or two other filmy sheaths); corolla superior, partly pelviform, of six petals, and without a tube (about the size of a quarter dollar), of a bright azure blue, and white at the base, the divisions oblong-obovate, the three interior somewhat smaller; stamina three; anthers linear, yellow, rolling inwards after the opening of the flower, separate at the base, arising from the claws of the three larger divisions; stigmas six, filiform, alternating by pairs with the stamina, of a deep blue colour, and pubescent at the summits; capsule inferior, oblong, obtusely triquetrous, attenuated at the base, 3-celled, many-seeded; seeds subcylindric-obovate, obsoletely triquetrous, and attached horizontally in several rows.—*Hab.* The prairies, from near Fort Smith on the Arkansas to the banks of Red river; abundant. Flowering in May and June.

This genus, notwithstanding the artificial character, is more nearly related to *Ixia* than *Moraea*; it possesses nothing of that affinity to *Iris*, either in the inequality of the divisions of the corolla, or the petaloid nature of the stigma, with which the stamina also alternate. In natural aspect, the latter species of this genus approaches to *Tigridia*, but differs essentially in the uncombined stamens, and the approaching equality and conformity of the petaloid segments. The bulbs, the leaves, the stem, the general form of the flower, and that of the capsule, are nearly the same. The nearest affinity of this genus appears to be to *Marica paludosa*, from which it differs in the stigma and relative magnitude of the segments of the corolla.

COMMELINEAE.

1. *COMMELINA communis.* 2. *C. erecta.* 3. *C. angustifolia.*

1. *TRADESCANTIA virginica*, and β *glabra.* Calicibus glabris, glaucescentibus. 2. *T. rosea.*

BROMELIAE.

TILLANDSIA usneoides. The first appearance of this plant, commonly called long-moss, along the banks of the Mississippi, is in the Cypress-bend, near the southern confines of the territory of Arkansas.

HYDROCHARIDEAE.

VALLISNERIA *spiralis* (V. Americana, Willd.).

UDORA *Canadensis*.

*PONTEDEREAÆ.

SCHOLLERA *graminifolia*. In ponds near the banks of the Arkansas; rare.

HETERANTHERA *limosa*.

PONTEDERIA *cordata*.—Rare.

Obs. These three genera, inseparable in natural affinity, appear to form a distinct section, better referable to this order than any other with which I am acquainted.

*ALISMOIDEAE.

1. ALISMA *plantago*.

2. A. **rostrata*. Foliis cordatis obtusis; scapo subsimplici, paucifloro; capsulis ovatis, rostratis.—*Hab.* In the ponds of the Verdigris river of Arkansas. Flowering in June and July.—*Obs.* The plant much smaller than A. *plantago*, twelve to sixteen inches high; the scape triquetrous, frequently simple, or with at most two or three branches at the base, as in the inflorescence of *Sagittaria*; the leaves 5 to 7-nerved; peduncles three together, more than an inch in length; bracts linear; stamina about nine; rostrum of the fruit almost its length. Nearly allied, apparently, to A. *cordifolia* of South America.

1. SAGITTARIA *sagittifolia*. 2. S. *graminea*.—*Obs.* The leaves, as in most aquatics, variable in form and magnitude, in place of linear and gramineous often long and lanceolate, with as many as five nerves; The peduncles of the scape are all remarkably long and slender, and the capitulum of fruit smaller than usual.

3. S. **radicans*. Foliis cordato-ovatis, undulatis, obtusis; scapo angulato, prostrato, longissimo; floribus subverticillatis, verticillis radicanibus.—*Hab.* In ponds near Fort Smith. Flowering in June and July.—*Obs.* The plant rather large, with the petioles, scape and calix

slightly scabrous; leaves somewhat rigid, 7-nerved, four or five inches long and three or four wide; scape triangular, often growing out to the length of two or three feet, inclining downwards and sending out radicles and leaves at the verticills; verticills 6 to 9-flowered; bracts lanceolate-acuminate; calix striated, a little scabrous; peduncles rather long; flowers hermaphrodite; stamina about twenty; fruit subfalcate. This curious plant appears to be considerably allied to *Alisma repens*, of the south of Europe.

NYMPHAEACEAE.

NYMPHAEA adorata.

NUPHAR advena.

BRASENIA peltata.

All of these plants, so common within the limits of the tide water, are in this inland territory extremely rare.

CYAMUS luteus (*Nelumbium luteum*, Willd.).—The Osages and other western natives employ the roots of this plant, which is of common occurrence, for food, preparing them by boiling. In form, the tubers resemble those of the *Batata* (or sweet potato), and are traversed internally by from five to eight longitudinal cavities. They are found at the depth of twelve to eighteen inches beneath the surface of the earth, and are connected by means of running roots. The tubers arrive at maturity about the time that the seeds begin to ripen; before that period they abound with a milky juice, in common with the whole plant, and indeed with several other genera of aquatics, as *Alisma* and *Sagittaria*, allied to the *Nymphaeaceae*. When fully ripe, after a considerable boiling, they become as farinaceous, agreeable and wholesome a diet as the potato. This same species, which, according to the relation of Pallas, appears also to be indigenous to Persia, is every where made use of by the natives, who collect both the nuts and roots, as was practised with the *κναιμος* of Theophrastus* by the Hindoos and Chinese from the remotest antiquity.

* *Cyamus Indicus.*

SCITAMINEAE.

CANNA flaccida.—On the banks of the Mississippi, a few miles below New Orleans.

THALIA dealbata.—In the ponds of the Pottoe river, and the Lesser North Branch of the Canadian; Arkansas; but not common.

ORCHIDEAE.

1. *ORCHIS psycodes*. 2. *O. spectabilis*. With the flowers mostly white, instead of particoloured.

3. *O. *leucophoea*. Labello tripartito, laciniato, maximo; laciniis lateralibus internis obovatis crenulatis; cornu filiformi clavato, germine longiore.—*Hab.* In moist prairies near Kiamesha, Red river. Flowering in June.—*Obs.* Probably the largest species in the United States; the stem being from eighteen inches to two and a half feet high; leaves oblong-lanceolate, diminishing into narrow lanceolate bracts, about the length of the germ; flowers white, a little tinged with green; the lateral segments of the petaloid calix ovate, and less than half the length of the lip, which is divided into three dilated segments, divided nearly to the base into many capillary portions. It is more nearly allied to *O. incisa* than *psycodes*, but differs from the former in the lacinated lip, and from the latter by the multiplicity of its segments, and the obovate, instead of linear form of the two internal petaloid divisions.

4. *O. *scutellata*. Labello subovali-oblongo, emarginato, basi utrinque ad medium dentato, cornu filiformi vix longitudine germinis; floribus sparsis; caule bifolio, foliis distantibus.

Descript. Root ; stem angular, about a foot high, bearing two distant, unequal, lanceolate, acute leaves, and two or three bracts below the commencement of the spike; floral bracts acute and sheathing, each about the length of the germ; flowers somewhat remote, forming a scattered spike three or four inches long; the three exterior or calicine segments obtuse and oblong, the two lateral, as usual, reflected; the two interior petaloid segments broader, more obtuse and connivent,

a little crenulated along the margin in common with the lip, and both of a yellowish green colour; spur curving upwards, a little thicker towards the base, and scarcely the length of the germ; the lip somewhat longer than the lateral segments, partly oblong-oval, emarginate at the extremity, and at its commencement producing a denture on either side, and one protuberant or central elevation.—*Obs.* In this species the lip is much the broadest portion of the corolla, and the widest at its base, from which, as well as the two leaves upon the stem, and its uneven margin, it is readily distinguishable from *O. tridentata*, but approaches *O. fuscescens*, and cannot be *O. clavellata* of Michaux, which in several characters agrees nearly with *O. tridentata*. The name I have employed, is in reference to the form of the lip, which is very much like that of an armorial shield.—*Hab.* In grassy swamps, in the prairies near Fort Smith, and also throughout Pennsylvania and New Jersey, not uncommon.

TRIPHORA pendula, Gen. Am. vol. 2, p. 192 (*Arethusa pendula*, Willd. 4, p. 82).

CALOPOGON pulchellum (*Cymbidium pulchellum*, Willd.).

TIPULARIA discolor, Gen. Am. vol. 2, p. 195 (*Orchis discolor*, Ph. 2, p. 586).

MALAXIS (*Microstylis*) *ophioglossoides*, Gen. Am. vol. 2, p. 196.

CORALLORHIZA (*Aplectrum*) *hiemalis* (*Cymbidium hiemale*, Willd.).

CYPRIPEDIUM pubescens, Willd. Sp. vol. 4, p. 143.

ARISTOLOCHIAE.

1. *ARISTOLOCHIA tomentosa*. 2. *A. hastata*, Gen. Am. vol. 2, p. 200.

3. *A. *reticulata*. Hirsuta; caule pumilo erecto; foliis subsessilibus, cordato-ovatis, obtusis, coriaceis, reticulatis; pedunculis radicalibus, racemosis, foliolosis; corolla labio retuso.—*Hab.* In woods, and on the shelvings of rocks on the banks of Arkansas and Red rivers; common. Flowering in June.—*Obs.* Root fibrous and aromatic, and entirely similar, in sensible qualities, to that of *A. serpentaria*. Stem scarcely a foot high, divided from the base, the upper part hirsutely pilose; leaves nearly sessile, roundish cordate or cordate-ovate, coriaceous and

partly sempervirent, the under surface conspicuously reticulated; peduncles radical, sometimes only 1-flowered, but more commonly several disposed in a leafy raceme; bracts oval; corolla pubescent, retorted, of a dark brown colour; the border trifid, the segments broad and retuse.

ASARUM Canadense.

COTYLEDONES.

Cotyledons or germinal leaves generally two, dissimilar to the perfect foliage; in *Pinus* and *Abies* three to twelve.*

CONIFERAE.

1. *PINUS inops.* 2. *P. variabilis.* 3. *P. rigida.*

JUNIPERUS Virginiana.

CUPRESSUS disticha, β imbricaria.—*Obs.* Floriferous branchlets covered with imbricated scales; staminiferous flowers collected into turbinate aments; the scales numerous, dilated and adnate at the base; staminiferous column filiform; anthers ten to fifteen, excentrically peltate; fructiferous aments two or three together at the base of the branches, roundish, the scales also adnate at the base, with one or two germs under each, marked with a concave point.

POLYGONEAE.

1. *POLYGONUM aviculare.* 2. *P. erectum*, Lin.; Persoon, vol. 1, p. 439 (*P. aviculare, β latifolium*, Mich. Flor. Amer. vol. 1, p. 237; Nuttall's Gen. Am. vol. 1, p. 254). *P. floribus pentandris trigynis axillaribus, foliis ovalibus obtusis, caule suberecto herbaceo.*—*Obs. A*

* In *Pinus* there exist three stages of foliation; as first, the cotyledons, which are followed during the year of germination by single naked leaves, and afterwards by the adult leaves, collected from two to five together in common sheaths. The reverse of this takes place in most of the *Acacias* of New Holland, whose adult leaves are simple and imperfect, while the incipient foliage, or that which immediately succeeds the cotyledons, is compound, as in most other species of the genus.

very distinct species from *P. aviculare*, and a much larger plant.—Common to many parts of the United States in similar situations.

3. *P. tenue*, Mich. Flor. Am. vol. 1, p. 238; Ph. vol. 1, p. 270.

4. *P. hydropiperoides*. 5. *P. hirsutum*. 6. *P. Virginianum*. 7. *P. articulatum*. 8. *P. parvifolium* (*P. polygamum*, Vent.).—On the sand hills of Red river. 9. *P. convolvulus*.

1. *ERIOGONUM* **longifolium*. Caulescens; foliis oblongo-lanceolatis striatis subtus tomentosis, caulinis solitariis alternis; ramis floriferis fastigiatis corymbosis.—*Hab.* On the ledges of the Cadron rocks, and in denudated prairies from Arkansas to Red river.—*Obs.* Root partly fusiform, brownish red, astringent and bitter to the taste, in some measure resembling rhubarb; leaves cespitose, a span long, often slightly and superficially plaited, above villous and green, beneath white and tomentose; stem simple, bearing alternate and remote leaves, which diminish to a very small size towards the summit of the stem; flowering branches forming a compound corymb. Involucrum cyathiform, many-flowered; pedicells pilose; flowers whitish, externally tomentose and shining; stamens nine; styles three; germ lanuginous. A very distinct species, allied to *E. tomentosum* of Michaux.

2. *E. *annuum*. Caulescens; foliis alternis oblongo-lanceolatis subtus tomentosis; ramis floriferis nudis cymosis; floribus glabris dioicis.—*Hab.* On the banks of the Great Salt river of Arkansas, and near the confluence of the Kiamesha and Red rivers.

Descript. Root brownish, perpendicular, sending out few fibres, and of annual duration (all the other species of the genus hitherto discovered are perennial); radical leaves crowded, distantly and irregularly crenulate, oblong lanceolate and acute, upper surface lanuginous, the under white and tomentose (after the manner of the genus); veins transverse and branching (in the preceding species longitudinal and parallel); stem terete and tomentose, often simple, sometimes considerably branched, the upper part naked, the lower often thickly set with leaves, destitute of nodes or swellings, as well as the preceding, the stature varying from one to three feet; cyme compound; involucre and flowers cyathiform; flowers of the clusters numerous, whitish, and, as in no other species, smooth and dioicous, extremely deciduous; segments of the petaloid calix unequal, the three larger in the styliiferous

flower obovate and emarginate, in the staminiferous oval and dilated, internally towards the base lanuginous; stamens nine; styles three; germ and seed smooth; radicle of the embryo incurved; this is by far the most extraordinary species of the genus, and in the flowers somewhat allied to *E. parviflorum*.

1. *RUMEX verticillatus*. 2. *R. persicarioides*. 3. *R. acetosella*.—*Hab.* On the hills of Masard prairie, six miles from Fort Smith, indubitably native.

BRUNNICHIA cirrhosa.—On the overflowed banks of the Arkansas; common.

CHENOPODEAE.

1. *CHENOPODIUM hybridum*.—At the confluence of Verdigris and Arkansas rivers. 2. *C. ambrosioides*.

ATRIPLEX hortensis.—Introduced.

KOCHIA dentata.—Common on all the sand beaches of the Arkansas, and remarkable by its almost innumerable branches.

CORISPERNUM **Americanum* (*C. hyssopifolium*, Ph. Nutt. Gen. Am.).—In similar situations with *Kochia*; common.†

AMARANTHEAE.

1. *AMARANTHUS albus*. 2. *A. hybridus*.

3. *A. tamariscinus*. *Racemis supradecompositis nudis erectis glabris, foliis lanceolatis*.—*Hab.* On the sand beaches of the Arkansas and Grand rivers; abundant; possessing, in some respect, the aspect of *A. albus*.—*Obs.* Stem three or four feet high and much branched, and as well as every other part of the plant perfectly smooth; flowering branches very compound and destitute of leaves, so as almost to resemble branches of *Tamarix gallicus*, the bracts being green, minute, imbricated and spinulose.

ALTERNANTHERA repens, Elliott.—On the banks of the Mississippi, and in the streets of New Orleans.—*Obs.* Heads of flowers roundish-ovate, sessile; bracts three; calix rigid, 5-parted, two or three of the

† *Camphorosma* ought to be excluded from the American Flora, having been inserted without sufficient authority.

segments smaller, externally pubescent towards the base, the pubescence consisting of barbed and numerous articulated hairs; stamina united into a small cup at the base, the filaments ten, of which five are without anthers; anthers 1-celled; stigma very short, partly capitate and undivided; utriculus, 1-seeded.

ACHYRANTHES **lanuginosa*. Caulibus prostratis diffusis, floribus sparsis cum foliolis congestis lanuginosis obvallatis, foliis subrotundo-ovatis.—*Hab.* On the sand-beaches of Great Salt river, Arkansas. Flowering in September.—*Obs.* Annual and every where densely lanuginous, the pubescence consisting of verticillately ramified hairs; leaves alternate, petiolate, roundish-ovate, obtuse and attenuated at the base; those of the branchlets crowded and sessile, amidst which are situated the scattered flowers, each mostly subtended by three small bracts; calix rigid, 5-parted, the segments somewhat linear and unequal, pubescent at the summits; stamina five, united into a small cup at the base; intercalary filaments none; anthers 1-celled; stigma capitate, undivided; utriculus 1-seeded, not valvular. A much larger species than the preceding, often spreading over a circumference of five or six feet. Possessing a good deal the habit of *Illecebrum frutescens*.

IREFINE celosioides.—On the alluvial banks of the Arkansas.—*Obs.* Perennial. Flowers dioicous, collected into paniculated spikes; calix 5-parted, membranaceous, subtended by three paleaceous bracts; corolla none, nor any petaloid process; stamens five, all fertile; anthers 2-celled; calix of the fruit-bearing flower only, subtended by long copious woolly hairs; style one; stigmas two, filiform; fruit a 1-seeded membranaceous utriculus; the seed dark brown, containing an incurved embryo. This description, which so materially differs from that of others, proves an essential affinity to the genus *Amaranthus*, from which it merely differs in the utriculus, which bursts irregularly, and in the singular wool, which subtends the base of the female calix.

PARONYCHIA dichotoma, Gen. Am. vol. 2, p. 159 (*Illecebrum dichotomum*, Willd.).—On the denudated prairies of the Arkansas and Red rivers.

1. *ANYCHIA dichotoma*. 2. *A. capillacea*, Gen. Am. vol. 2, p. 159. Perfectly distinct from the preceding, whose place it wholly occupies in the northern states.

OPLOTHECA floridana, Gen. Am. vol. 2, p. 78, 79.—*Obs.* Root

annual; stem branched from the base; leaves thick and somewhat succulent, no way scabrous in a living state. Flowers spirally imbricated, in five? rows.

PHYTOLACCA *decandra*.

RIVINA **portulacoides*. Racemis simplicibus; floribus tetrandris; foliis ovatis subundulatis acuminatis glabris; caule sulcato herbaceo; baccis siccis.—*Hab.* On the alluvial lands of the Verdigris river, near its confluence with the Arkansas.—*Obs.* Plant smooth, three or four feet high; racemes many-flowered, erect, axillary and terminal; calix rosaceous, becoming green in the fruit; utriculus greenish and juiceless; seed lunate, on one side convex. Nearly allied to *R. laevis*.

SANTALACEAE.

COMANDRA *umbellata*, Gen. Am. vol. 1, p. 157 (*Thesium umbellatum*, Lin.).

HAMILTONIA *oleifera*, Willd. (*Pyrularia*, Mich.).

1. NYSSA *biflora*. 2. *N. candicans*.

THYMELEAE.

DIRCA *palustris*.—In the alluvial lands of the Pecannery settlement.

LAURINEAE.

1. LAURUS *sassafras* and β *albida*. 2. *L. benzoin*.

AMENTACEAE.

1. SALIX *conifera*. 2. *S. nigra*. 3. *S. longifolia*.

1. POPULUS *monilifera*.—Abundant in the inundated banks of the Arkansas and Red river. The bark always appears whiter and smoother than in the following, and the branches are not angular; in other respects they are precisely alike. 2. *P. angulata*.

MYRICA *cerifera*.—*Hab.* On the pine cliffs contiguous to the Arkansas.

BETULA populifolia.—On the banks of Grand river of the Arkansas; rare.

CARPINUS Americana.

OSTRYA virginica.—Banks of the Arkansas.

FAGUS sylvatica.—Not met with to the south of the river St Francis.

1. *CASTANEA pumila*.—Chiefly on the summits of hills and mountains. 2. *C. nana*, foliis oblongis, acutis, mucronato-serratis, glabris; nucibus solitariis.—*Hab.* On the pine-hills of the Arkansas; a shrubby species, allied to *C. pumila* (*C. nana*, Muhl. Catal. et Herb.). The younger leaves are sometimes slightly pubescent. This species also grows abundantly around Tallahassee, in West Florida. It is always more dwarf than *C. pumila*.

1. *QUERCUS phellos*. 2. *Q. imbricaria*. 3. *Q. aquatica*. 4. *Q. nigra*. 5. *Q. tinctoria*. 6. *Q. coccinea*. 7. *Q. rubra*. 8. *Q. falcata*. 9. *Q. obtusiloba*. 10. *Q. macrocarpa*. 11. *Q. lyrata*. 12. *Q. alba*. 13. *Q. bicolor*. 14. *Q. montana*. 15. *Q. castanea*. 16. *Q. chinquapin*.—On the hills contiguous to the Great Salt river, and on the summits of the mountains of the Pottoe.

CORYLUS Americana.—On the banks of the Salaiseau and Spadrie creeks of the Arkansas; rare.

LIQUIDAMBAR styraciflua.—*Obs.* Masculine ament conic, each flower polyandrous; proper calix 5-leaved, the exterior leaflets larger. In this country, as in South Carolina, it affords storax by incision.

PLATANUS occidentalis. In this country it is not large, and appears to be on the verge of its southern limit.

1. *JUGLANS nigra*. 2. *J. cinerea*.

1. *CARYA* (Gen. Am. vol. 2, p. 220) *olivaeformis*. 2. *C. alba*. 3. *C. tomentosa*. 4. *C. amara*. 5. *C. porcina*. 6. *C. aquatica*.

1. *FRAXINUS quadrangulata*. 2. *F. Caroliniana*. 3. *F. sambucifolia*.—*Obs.* Leaves and petioles before expansion covered with glandular scales, emitting the odour of the walnut; branches glabrous, the bark of the trunk reticulately rimose.

URTICAE.

1. *URTICA urens*. 2. *U. procera*.—This species often attains the height of eight or ten feet.

3. *U. *purpurascens.* Pumila, hirsuta; foliis oppositis cordato-ovatis dentatis longe petiolatis; floribus monoicis glomeratis subsessilibus.—*Hab.* In the shady alluvial and overflowed forests of the Mississippi and Arkansas. Flowering in February.—*Obs.* Perennial and urent. Stem quadrangular, six to ten inches high, grooved, purple and hispid; petiole of the lower leaves as long as the lamina (one inch); leaf hispid, roundish-cordate, dentate, on the lower part of the stem obtuse, higher up acute, partly 5-nerved, beneath commonly purple; stipules linear, reflected; flowers axillary, in shortly pedunculated conglomerate clusters, shorter than the petiole, and coming out by pairs; stamens four, elastic; gland depressed; female calix 2-leaved; seed elliptic, compressed. 4. *U. Canadensis.*

BOEHMERIA cylindrica.

PARIETARIA Pennsylvanica.

*CELTIS *integrifolia.* Foliis oblique ovatis acuminatis integris membranaceis glabriusculis, pedunculis adnatis subbifloris.—*Hab.* On the banks of the Mississippi, White, Red and Arkansas rivers, &c. forming a tree of moderate magnitude, with the bark even or rimose; branches flexuous; leaves smaller than usual; stipules oblong and membranaceous, caducous; flowers dioicous, often ternate, with two of the pedicells frequently conjoined; stamina mostly five, rarely six; berries solitary, fulvous brown, and of a saccharine taste. Flowering in March. *C. occidentalis, β integrifolia, Gen. Am. vol. 2, p. 202.*

1. *ULMUS Americana.*

2. *U. *crassifolia.* Foliis parvulis confertis oblongo-ovatis obtusis serratis, basi inaequalibus; ramis teretibus.—*Hab.* On the prairies of Red river. A species bearing some resemblance to *U. alata*, but much more nearly related to *U. pumila* of Siberia.—*Obs.* A tree of moderate magnitude, crowded with small, thick and opaque scabrous leaves and intricate spreading branches, affording a dense shade, and of a very deep verdure. The leaves are moreover somewhat pubescent beneath, scarcely an inch long, and about five lines wide, with the margin for the most part simply serrated and the serratures obtuse. The flowers and fruit I have never seen.

1. *MORUS rubra.* 2. *M. scabra.*

MACLURA aurantiaca.—*Hab.* In two or three localities on the banks

of the Arkansas, as, near the Cadron settlement, and on the banks of the Pottoe, a few miles from Fort Smith; but only abundant on the banks of Red river and the Washita.—*Obs.* Not being acquainted with the stameniferous flowers of this genus when I published it in the *Genera of North American Plants*, vol. 2, p. 233, I shall now add a description of them, so as to complete the character. The male flowers, which I obtained near the confluence of Red river and the Kiamesha, in a withered and persistent state, appeared to have been in flower early in the month of May. They are quite small, and of a greenish colour, collected into roundish, clustered and pedunculated racemes, after the manner of beech flowers of the same sex, each being furnished with a proper filiform peduncle. The calix, as in *Morus*, is 4-parted, with oblong segments, and not more conspicuous or larger than the ordinary flower of a nettle; the stamens are commonly four in number, sometimes less; the filaments, which are pubescent at the base, appear longer than the calix, and by their structure, in all probability, spring forward elastically after the opening of the flower, as is common with *Urtica* and some neighbouring genera. The 2-celled anthers, as well as the filaments, are also persistent.

The wood of this tree appears almost precisely similar to that of the Fustick (*Morus tinctoria*) of commerce, but does not afford a permanent dye. From the true Fustick this plant is perfectly distinct; its fruit is vastly larger, and not, as in that, composed of *distinct acini*, but of germs which naturally ingraft themselves into a simple many-seeded berry like the orange, &c.

HUMULUS lupulus.

EUPHORBIACEAE.

1. *EUPHORBIA cyathophora*.—Near Fort Smith. This species, in the United States, is always herbaceous and annual. In the West Indies it appears to be shrubby. 2. *E. graminifolia*.—Agreeing with Michaux's description, except in being perfectly smooth, and apparently not much inclined to branch.

3. *E. dentata*, Mich. *Hirsuta, erecta; foliis oppositis alternisve, ovato-lanceolatis dentatis concoloribus; floribus ad summitates congestis.*

—*Hab.* Banks of the Arkansas.—*Obs.* Stem hirsute and branching from the base; upper surface of the leaves smooth; dentures often uncinata; calicine glands green and cup-shaped; angles of the fruit obtuse.

4. *E. hypericifolia*. 5. *E. thymifolia* (*E. maculata*, Jacquin. Hort. Vind. t. 186, β **disticha*). Foliis distichis approximatis; caule suberecto.—*Hab.* Banks of the Mississippi and Arkansas.

6. *E. *herniaroides*. Humifusa prostrata glaberrima; foliis oppositis subrotundo-ovalibus integerrimis; floribus sparsis plerumque aggregatis, coccus carinatus.—*Hab.* On the overflowed banks of the Arkansas and Mississippi. Nearly allied to *E. microphylla* of India.—*Obs.* Annual. Stem prostrate, diffusely branched, sometimes repent towards the base; leaves roundish-oval, about the size of those of thyme; stipules partly ovate, membranaceous; flowers approximating, axillary and terminal, greenish and inconspicuous.

7. *E. *maritima*. Parvula, glabra; foliis oppositis integerrimis lineari-oblongis brevibus; floribus sparsis dichotomalibus subsessilibus, fructibus subrotundis; caule procumbente.—*Hab.* On the sea beach of New Jersey.—*Obs.* Annual. The plant small, diffusely and dichotomously branched, the branches not flaccid; stipules setaceous; flowers green and inconspicuous, approximating towards the summits of the branchlets; styles very short; the fruit smooth and roundish, with the angles almost obsolete, and more than twice the size of that of *E. thymifolia*, though the plant is of nearly the same magnitude, and perfectly smooth.—This species appears to be somewhat allied to *E. polygonifolia*, and I have introduced it here in consequence of its affinity to the following.

8. *E. *arenaria*. Glabra, foliis oppositis integerrimis linearibus oblongiusculis obtusis remotis; pedunculis dichotomalibus solitariis; corolla alba tetrapetala.—*Hab.* On the sandy banks of the Arkansas and Red rivers.—*Obs.* Annual. Stem diffusely branched, somewhat glaucous; leaves about an inch long; petals white and conspicuous, as in *E. corollata*; fruit roundish, the angles obtuse. Flowering in June and July.

9. *E. *heterantha*. Caule erecto angulato, opposite ramoso; foliis oppositis lineari-lanceolatis acutis integerrimis; floribus sparsis dichoto-

malibus luteis monoicis.—*Hab.* On the sandy banks of the Arkansas, from Fort Smith to Salt river. Flowering in July.—*Obs.* Annual. Stem erect and much branched, one to two feet high; leaves thin, all of the same colour, two to two and a half inches long, and about half an inch wide in a younger state, on the under side as well as the unexpanded flowers slightly pubescent, those of the branchlets very narrow and linear; flowers dichotomal and sometimes partly axillar; calicine involucre cyathiform, the border merely 5-cleft, the segments subovate and acute, above yellow, each bearing a cup-shaped gland at its base; very few of the flowers fructiferous; stamens, as in the rest of the genus, articulated, perfecting at different times; fruit smooth and distinctly 3-lobed. The flowers differ materially from those of any other of the North American species.

10. *E. *peploides.* Umbella subtrifida dichotoma, involucellis reniformi-cordatis; foliis integerrimis cuneato-obovatis subconfertis erectis; laciniis petaloideis bicornibus.—*Hab.* From the town of Arkansas to the garrison of Fort Smith, in denudated soils. Flowering in April.—*Obs.* Annual. Stem about a span high, simple or branched towards the summit; leaves smooth, thickly scattered, erect, sometimes subimbricate, sessile, cuneate and partly retuse, the upper ones largest; umbell 3 or 4-cleft; proper involucre suboval; leaves of the involucre cordate-reniform and obtuse; flowers dichotomal, small and yellowish; segments of the involucre four and five, crescent shaped, with the extremities subulate; capsule 3-lobed, smooth and even. Nearly allied to *E. peplus*.

11. *E. obtusata*, Ph. Flor. Am. Sept. 2, p. 606.—Very nearly allied to the preceding. 12. *E. marginata.*—*Hab.* On the banks of the Arkansas from the Verdigris to Salt river.—*Obs.* Stamina numerous, intermingled with infertile pubescent filaments. 13. *E. corollata.*

ACALYPHA virginica.—*Obs.* Male flowers minute, disposed in a conglomerated pedunculate spike, arising from the base of the feminine involucre; calix 4-parted; corolla none; stamina four to eight?, minute. Feminine flowers three or more together; calix 3-parted; corolla none; capsule tricocous, hirsute; stigmas three, multifid (four, five or more cleft).

*TRAGIA *angustifolia.* Hirsuta, caule erecto ramoso; foliis inferi-

oribus subovatis petiolatis acute dentatis, superioribus lineari-oblongis sessilibus; pedicellis bracteis longioribus.—*Hab.* On the prairies of Red river, in arid situations.—*Obs.* Perennial. Stem five or six inches high, somewhat branched, and, as well as the other parts of the plant, slightly hirsute and stinging; stipules subulate and minute; flowers often tetrandrous, with a 4-cleft calix; capsule hispid. Nearly allied to *T. urens*, but the leaves are every where equally toothed, and the plant perennial.

2. *T. *betonicaefolia.* Hirsuta, caule erecto subsimplici; foliis cordato-ovatis petiolatis, acute dentatis; pedicellis bracteis brevioribus.—*Hab.* With the preceding, to which it is nearly related, and also to *T. urticaefolia.* This species I have also collected in East Tennessee, and like the former it is perennial. From the figure of *T. nepetaefolia*, given by Cavanilles, I should have concluded it to be the same plant, only that it is described as an annual, much branched, and with the leaves glaucous beneath, in all which particulars it differs from our plant.

1. *CROTON glandulosum.* 2. *C. capitatum.* 3. *C. ellipticum* (*Crotonopsis elliptica*, Willd.).

4. *C. *muricatum.* Caule herbaceo ramosissimo; foliis oblongo-lanceolatis integerrimis tomentosis; floribus dioicis, masculis subpaniculatis glomeratis; stigmata multifida; capsula muricata.—*Hab.* On the sand beaches of Great Salt river, Arkansas. Flowering in September.—*Obs.* Annual. The whole plant covered with a whitish stellate pubescence. Stem much branched, about two feet high; leaves alternate and opposite, petiolate, those of the female plant narrower and green on the upper surface; branches of the stamiferous plant terminating in naked paniculated clusters of flowers, consisting merely of a roundish calix, each containing about ten or twelve uncombined stamens. Female, mostly solitary, dichotomal and terminal; the calix 5-cleft, and divided nearly to its base, with the segments acute; corolla none; styles three, stigmas about eighteen! capsule subglobose, tricoceous, tomentose and muricate, with soft protuberances. The whole plant, as in most of the genus, aromatic.

CROTONOPSIS linearis, Mich. (*Croton?*).

***APHORA**†. Polygama. *Mas.* Calix quinquepartitus; petala quinque; filamentum columnare; stamina septem, duo interiora; rudimenta quinque, minuta. *Fem.* Calix major; petala nulla; filamenta quinque, infertilia; stigmata tria, bifida; capsula tricocca, trisperma.

Herba perennis, non lactescens, odore foetida, caule simplici; folia integra exstipulata, alterna; flores racemosi, axillares, bracteolati. Ditaxis affine, sed habitu diversa.

A. mercurialina. Caule subsimplici; foliis obtusis pubescentibus; petalis integris.

Descript. Root perennial. The whole plant thinly covered with undivided appressed hairs; stem simple, grooved, from twelve to fifteen inches high; leaves oblong-ovate, entire and obtuse, partly 3-nerved, alternate, sessile and rather numerous, from ten to fifteen lines long and about five lines wide; racemes pedunculate, solitary and axillary, much longer than the leaves; the flowers, which are greenish, subtended by minute bracts, the staminiferous ones much more numerous than the others, and sustained by shorter pedicells. Some of the plants produce only male flowers, others female or an admixture of both. *Male* calix 5-parted, the segments linear-lanceolate, acute and erect; petals oblong, also greenish; filaments united into a column; anthers in two sets, two and sometimes three above the other five, 2-celled. The rudiments of five other filaments appear round the base of the antheriferous column. *Female* calix producing lanceolate and acute spreading segments, divided to the base, and at least three times larger than those of the male flower; corolla none; infertile filaments five, conspicuous; style very short; stigmas three, short and reflected, partly bifid; capsule tricoccous, pubescent, cells 1-seeded. I have not been able to trace the affinities of this curious plant, which in some respect resembles *Mercurialis annua*. It bears no affinity to *Croton*, its pubescence is simple and its odour fetid; *Ditaxis*, to which it is closely allied, is an arborescent dioicous plant.—*Hab.* In hilly and denudated portions of the calcareous prairies of Red river, near the confluence of the Kiamesha. Flowering in the latter part of May and June.—*Obs.*

† From ἀφεία sterility, in allusion to the infertile filaments existing in the flowers of both sexes.

The *Croton lanceolatum*, Cavan. ic. 6, p. 38, t. 557, f. 2, appears to be a second species of this genus, but produces only five? stamens and five glands exterior to the germ and stamina, in place of filaments; but this species ought perhaps to be re-examined in a living state, as the flowers are minute.

**MASCHALANTHUS*.† Monoica. Calix sexpartitus; stamina monadelphica, tria; torus glandulosus, sex ad duodecim-dentatus; styli tres; capsula trilocularis; loculis dispermis.

1. *M. obovatus* (*Phyllanthus Carolinianus*, Mich. Fl. Am. vol. 2, p. 209). Annuus. Foliis obovatis obtusiusculis; floribus subgeminis axillaribus sessilibus; caule erecto ramoso tereti.

2. *M. polygonoides*. Suffruticosus, humilis; foliis cuneato-oblongis acutiusculis, stipulis membranaceis subulatis; floribus axillaribus pedunculatis subquinatis.—*Hab.* On calcareous rocks in the plains of Red river. Flowering in May and June.—*Obs.* Root woody; stem very short (four to six inches), sending out numerous branches from the base, which towards the root are crowded with sphacelous stipules; branches filiform, terete and decumbent; pedicells capillary. Masculine calix minute, the segments membranaceous on the margins; stamina three, monadelphous; glandular disk 6-toothed?; petals none. Female flowers mixed with those which are staminiferous, or occasionally on a distinct plant; the calix larger and foliaceous; petals none. The whole aspect and magnitude of the plant is similar to that of *Polygonum aviculare*. To this genus ought probably to be referred several other species included in *Phyllanthus*.

**LEPIDANTHUS*.‡ Dioica. Calix quinquepartitus; petala quinque; stamina quinque, libera; torus glandulosus, decemdentatus; styli tres, bifidi; capsula trilocularis; loculis dispermis.

Frutex humilis; folia alterna integra, stipulis minutis; flores axillares.

L. phyllanthoides. *Descript.* Shrub much branched, two to three feet high; branches ferruginous and brittle; branchlets striate, a little

† From *μασχάλην* axilla, and *ανθος* a flower, the flowers being strictly axillary, and not produced upon foliaceous expansions of the stem.

‡ From *λεπίς* a scale or petal, and *ανθος* a flower; in allusion to the existence of petals in this genus which are wanting in *Phyllanthus*.

hairy; leaves roundish-oval, entire, very obtuse, subsessile and reticulately veined; stipules minute, ferruginous, pilose and acute; peduncles filiform; the male flowers growing commonly by three together; the female ones single. *Male* calix 5-parted; segments oblong, obtuse, and with the margin pubescent; petals five, alternate, yellowish-green, cuneate-oblong, obtuse; glandular ring or torus 10-toothed; stamina five, unconnected; styles three, abortive; stigmas undivided. *Female* calix almost exceeding the fruit in magnitude, 5-parted, the divisions roundish-oval, green and foliaceous; petals five, minute, almost like glandular appendages; styles three, bifid; capsule round and somewhat succulent, 3-celled, cells 2-seeded; seeds triquetrous, not elastically arillate?

This plant is nearly allied to *Phyllanthus*, and more particularly to the North American section of that genus. The leaves possess in a weaker degree the aroma and flavour of tea.—*Hab.* In the torrents of the Mazern mountains, towards the sources of the Pottoe and Kiamesha, as far as the vicinity of Red river; abundant. Flowering in May and June.

JATROPHA stimulosa, Mich.—In the upland forests of Red river.

*STILLINGIA *lanceolata*. Herbacea; foliis subsessilibus, ovato-lanceolatis acutis, serratis.—*Hab.* In the prairies at Belle Point, Fort Smith. Nearly allied to *S. sylvatica*.—*Obs.* Spike about three inches long; the flowers yellowish and diandrous; cells of the anthers remote, only partially opening along the margin.

FORESTIERA, Poiret, *Encyc. suppl.* 2, p. 664 (*Adelia*, Mich. Fl. Bor. Am. t. 48; Borya, Willd. *Sp. pl.* 4, p. 711; Pursh, 1, p. 22; *Bigelovia*, Smith, *Encyc. Lond. Suppl.*).

Dioica. *Mas.* Involucrum tetraphyllum, multiflorum; calix 0; corolla 0; stamina 4—6, decidua, pedicello nudo insidentia iis articulata, diverso tempore erumpentia. *Fem.* Stigma capitatum; drupa monosperma obliqua.

F. acuminata.—*Obs.* A large shrub, sometimes bordering upon a tree, and sending out many stems from the same root. Branches not unfrequently terminating in spines. Male flowers irregularly scattered

over the branches in sessile buds, which appear before the development of the leaves; they are destitute of a proper calix and corolla. The involucre consists of nothing more than the four innermost greenish decussated bud scales, the lower ones being smaller, sphacelous and more numerous. The flowers are aggregated by six, eight, or more together, and the stamina, four to six in number, are articulated to a common receptacular pedicell, and exerted beyond the involucre, perfecting at different times; anthers roundish, adnate to the filaments. The singular structure of the flowers, notwithstanding the disparity of the fruit, renders this plant inseparable from the order of Euphorbia.—*Hab.* In the inundated lands of the Ohio, Mississippi, Arkansas and Red rivers.

2. *F. pubescens*. Foliis ovatis serrulatis pubescentibus subpetiolatis; fructibus oblongis parvulis.—*Hab.* In the prairies of Red river.—*Obs.* A low and very much branched shrub, almost similar to a sloe bush; branchlets and leaves pubescent; leaves obtuse or acute, opposite; fruit cylindric-oblong, black and saccharine to the taste, upon longish peduncles, and scarcely half as large as that of *F. acuminata*, the nut striated and a little oblique, the shell flexible; embryo flat and erect, immersed in the centre of a cartilaginous albumen. As this plant is now cultivated in the gardens of Messrs Landreth and Bartram, I imagine it to be the same which Mr Pursh saw among the specimens collected by Lyons, which I can by no means reconcile to the description of *F. ligustrina* of Michaux.

PLANTAGINEAE.

1. *PLANTAGO major*. 2. *P. virginica*.

3. *P. purpurascens*. Foliis lanceolatis dentatis pubescentibus; spica laxiuscula; stamina exserta; scapo tereti hirsuto.—*Hab.* On the banks of the Arkansas; abundant. Nearly allied to *P. virginica*, but with the stamens always exerted, and the leaves often retrorsely toothed.—*Obs.* Biennial. Almost canescently pubescent; anthers purple.

4. *P. heterophylla*. Foliis linearibus sublacinatis planis, basi lanatis; scapo tereti.—*Hab.* On the banks of the Mississippi and Arkansas; frequent. Allied to *P. maritima*, but not succulent, the plant much

smaller, with the leaves sometimes almost filiform, and the scape pubescent.

5. *P. pusilla*, Gen. Am. vol. 1, p. 100 (*P. aristata*, Mich. Fl. Am. 1, p. 95). 6. *P. gnaphaloides*, Gen. Am. vol. 1, p. 100 (*P. lagopus*, Ph. Fl. Am. 1, p. 99).

7. *P. *squarrosa*. Stamina inclusa; foliis linearibus striatis glabris; scapo tereti lanuginoso; bracteis linearibus longissimis.—*Hab.* In arid and denudated places in the prairies near Belle Point or Fort Smith.—*Obs.* Annual. Leaves four or five inches long, two or three lines broad, smooth, shining and arid, attenuated at the base, membranaceously sheathing; caudex woolly; bracts from half to three quarters of an inch long, nearly smooth and filiform; calix woolly, segments obtuse; capsule 2-seeded. Allied to *P. gnaphaloides*.

NYCTAGINEAE.

1. *CALYMENIA corymbosa* (*Mirabilis corymbosa*, Cavan. ic. 4, p. 55, t. 379; *Allionia nyctaginea*, Mich. Fl. Am. 1, p. 100; Ph. Flor. Am. 1, p. 97; *Calymenia nyctaginea*, Gen. Am. vol. 1, p. 25).

2. *C. angustifolia*, Gen. Am. vol. 1, p. 26.

PRIMULACEAE.

ANDROSACE occidentalis.—*Hab.* On the rocky summit of a hill in Cedar prairie, ten miles from the garrison.

DODECATHEON integrifolium, β **album*. Foliis ovatis, integrisculis, umbellis paucifloris; bracteis lanceolatis acutis; floribus albidis.—*Hab.* In humid prairies near Fort Smith. Flowering in April and May.—*Obs.* Leaves ovate or lanceolate, sometimes subdenticulate, four or five inches long; segments of the calix and bracts very acute, the latter sometimes acuminate; flowers constantly white, segments elliptic-oblong or oblong-lanceolate, spotted towards the base; incrassated filaments, sometimes purple.

LYSIMACHIA ciliata.

ANAGALLIS arvensis. Introduced.

MICRANTHEMUM orbiculatum.

CENTUNCULUS lanceolatus.—On the margins of ponds near Fort Smith.

SAMOLUS *Valerandi*.—Near the town of Arkansas.

UTRICULARIA *vulgaris*.

SCROPHULARINEAE.

PEDICULARIS *Canadensis*.—The flower is here always ochroleucous.

MELAMPYRUM *lineare* (M. Americanum, Mich.).

SCROPHULARIA *Marilandica*.

ANTIRRHINUM *Canadense*.

VERONICA *peregrina*, Willd. Sp. Pl. 1, p. 76; Vahl. Enum. pl. 1, p. 85.—Common.

LEPTANDRA *virginica*, Nutt. Gen. Am. vol. 1, p. 7 (*Veronica virginica*, Lin.; *Callystachya*, Rafinesque. A name heretofore employed for another genus).

COLLINSIA **violacea*. *Puberula*, foliis ovato-lanceolatis, remote denticulatis; corolla subconcolore; labio superiore inferiore dimidio minore, laciniis omnibus apice bifidis; capsulis subdecempermis.—*Hab.* On the hills and upland woods of the Arkansas and Red rivers; abundant. Flowering in April and May.

Descript. Annual. Root fibrous; stem terete, oppositely branched, pulverulently pubescent, mostly purple, and from four to twelve inches high; radical leaves oblong-ovate, those of the stem ovate-lanceolate, sessile, opposite, remotely denticulate and acute, of a somewhat thickish consistence and covered with a pubescence similar to that of the stem, the uppermost verticillate in threes; calix subcampanulate, 5-cleft, the base angular, segments ovate-lanceolate acute; corolla bright violet (like that of many species of the genus *Phlox*), the upper lip paler; segments bifid at the extremity, those of the lower lip partly obcordate, segments of the upper somewhat truncate, and about half the size of the lower; the palate of the upper lip marked with a reniform, yellowish and fulvous spot, which is immaculate in the centre; stamina four, declinate, the rudiment of a fifth at the base of the tube of the corolla; filaments pubescent towards the base; style simple, filiform; stigma minute; capsule roundish-ovate, partly 2-celled, imperfectly 4-valved; germ about 10-seeded? seeds much smaller than in *C. verna*. Allied to *C. grandiflora* of Oregon.

MIMULUS alatus, Willd. Sp. Pl. 3, p. 361; Ph. Fl. Am. 2, p. 426.

1. *GERARDIA purpurea*. 2. *G. tenuifolia* and β **parviflora*. Floribus minoribus; calice tubo corollae aequali, dentibus acuminatis; fructibus majoribus.—*Hab.* In the prairies of the Arkansas above the Verdigris river. Apparently a distinct species.—*Obs.* Annual. The stem is less branched, and inclined to grow taller than *G. tenuifolia*, whose flowers are larger, with a much smaller calix.

3. *G. *longifolia*. Caule subsimplici; foliis filiformibus scabris, pedunculo elongato longioribus; floribus maximis; calicis dentibus longe acuminatis.—*Hab.* On the banks of the Arkansas. Flowering in August and September.—*Obs.* At first sight this species might be confounded with *G. purpurea*, although perfectly distinct, and apparently intermediate with it and *G. tenuifolia*. Annual. Stem twelve to eighteen inches, quadrangular; leaves opposite, from one and a half to two inches in length, and not broader than those of the Weymouth pine; the peduncles a little shorter, opposite and axillary; calix campanulate, its acuminate segments nearly its length; corolla somewhat larger than that of *G. purpurea*, purple, with the margins of the lobes pubescent.

4. *G. *heterophylla*. Foliis scabris lineari-lanceolatis acutissimis, inferioribus sublacinatis trifidis; floribus subsessilibus; calicinis laciniis linearibus acuminatis patentibus.—*Hab.* In the prairies of the Arkansas, near Great Salt river. Flowering in September.—*Obs.* Annual. Stem angular, about two feet high, and much branched; leaves opposite and alternate, the lower ones trifid or lacinate; the flowers approximating towards the summits of the branches, purple, with the segments pubescent along the margin; segments of the calix linear and very acute, as long as the undivided base, and falcate or spreading.

5. *G. auriculata*, Mich. Flor. Am. 2, p. 20. 6. *G. quercifolia*, Pursh, 2, p. 423. 7. *G. pedicularia*.

SEYMERIA macrophylla, Gen. Am. vol. 2, p. 49.—On the banks of the Arkansas near the garrison.

EUCHROMA coccinea, Gen. Am. vol. 2, p. 55 (*Bartsia coccinea*, Lin.).

2. *E. *purpurea*. Foliis cuneatis trifidis sublacinatis, bracteis rubris consimilibus; calix corollisque coloratis quadrifidis, unilaterialis; corolla laciniis acutis.—*Hab.* On rocks in the hilly prairies of Red

river. Flowering in May.—*Obs.* Perennial. Stem tomentose, the leaves more slightly so; bracts, calix and corolla of a brilliant reddish purple; segments of the calix linear, all inclined to one side, and nearly the length of the corolla; apex of the upper lip of the corolla greenish (no glands at the base of the lower lip); seed covered with a reticulated and perforated membranaceous vesicle. Considerably related to *E. grandiflora*, but differing in the proportions of the flower, and the dilation and brilliant colour of the bracts.

1. *HERPESTIS rotundifolia*. 2. *H. Brownei*.—Banks of the Mississippi.

1. *GRATIOLA virginica*. 2. *G. pilosa*. 3. *G. anagallidea*, Mich. (*G. acuminata*, Elliott, Sketch Bot. Carol. 1, p. 15, not of Pursh).

1. *LINDERNIA pyxidaria* (L. dilatata, Muhl. Catal.; Elliott, Bot. Carol. 1, p. 16). 2. *L. attenuata*, Muhl. Catal.—*Obs.* The capsule in this genus appears to be generally 1-celled.

CHELONE glabra.

1. *PENTSTEMON laevigatum*, Willd. Sp. Pl. 3, p. 228; Pursh, 2, p. 427.

2. *P. digitalis*. Glaberrimum; foliis caulinis connatis ovato-lanceolatis acuminatis repando-denticulatis; calicibus viscosis, laciniis acuminatis reflexis; corolla magna subcampanulata, appendice superne barbato.—*Hab.* In wet woods and prairies; common. Flowering in May.—*Obs.* Allied to *P. campanulata*. Perennial. Leaves broad; panicle naked, trichotomous, few-flowered, ultimate branches and calix viscidly pubescent; corolla similar to *digitalis*, pure white and minutely pubescent, the tube exerted, orifice inflated, subcampanulate and terete; the upper lip a little shorter than the lower and coarctate, the inferior 3-lobed and dilated, the margin of the orifice on the lower side sometimes bearded; sterile filament or appendage partly exerted, longitudinally bearded; anthers smooth, dark purple.

3. *P. *tubaeformis*. Foliis ovatis connatis denticulatis glabris; caule nudiusculo elato; calice corollisque viscoso-pubescentibus, laciniis ovatis; corolla tubaeformi, limbo intus villosa, appendice barbato.—*Hab.* In wettish prairies, from Fort Smith to Red river. Flowering in May and June.—*Obs.* Perennial. Radical leaves elliptic-ovate, entire and smooth, cauline all situated towards the base of the stem,

lower ones oblong-ovate; stem two or three feet high, the leaves so small and remote above as to give it the appearance of being naked; segments of the calix appressed; corolla of a pure white, not plaited beneath, segments oval; the whole orifice and tube villous. A very beautiful species, with the flowers rather small and crowded as it were in verticillate clusters.

4. P. **Cobaea*. Puberulum, caule pumilo; foliis oblongo-ovatis argute serrulatis nitidis; floribus pubescentibus maximis inflatis purpureis, intus striatis; calice laciniis ovatis; appendice longitudinaliter barbato.—*Hab.* In the sterile and denudated portions of the prairies of Red river, in calcareous soil. Flowering in May.—*Obs.* Perennial. Upper leaves ovate, beneath slightly pubescent; flowers by pairs; leaves broadish and thick; calix viscidly pubescent, segments oblong-ovate; flowers bluish purple, nearly as large, and almost of the same form as those of *Cobaea scandens*!; stem about a span high.

OROBANCHE *biflora*, Gen. Am. vol. 2, p. 59 (*O. uniflora*, Lin.).—In the Osage prairie, near the Verdigris river.

CAPRARIA *multifida*.—*Obs.* Calix 5-parted, the segments subulate; corolla tubular, subbilabiate, base of the tube somewhat globose, border 4-lobed; lobes rounded, upper segment emarginate, the lower ones entire; capsule ovate, 1-celled, 2 and at length 4-valved; seeds very numerous and minute; duration annual; leaves opposite and ternate, lyrate, partly twice trifid, the segments linear-oblong and obtuse. This genus appears to be divided, and requires revision with living specimens. I have elsewhere proposed this plant as a genus distinct from the true *Caprarias* by the name of LEUCOSPORA.

BUCHNERA *Americana*.—The specimens uncommonly large.

ACANTHACEAE.

1. *RUELLIA strepens*.

2. R. **humilis*. Erecta, hirsuta; foliis oblongo-ovatis integriusculis sessilibus; pedunculis 1—3-floris; calicis laciniis filiformibus tubo corollae duplo brevioribus.—*Hab.* On rocks in the upland forests and prairies.—*Obs.* Perennial. Stem seldom exceeding a span; the

leaves and flowers very similar to those of *R. strepens*, but sessile and not perfectly entire. Flower pale blue, commonly two inches long.

1. *JUSTICIA ensiformis*, Walter, p. 63 (*J. pedunculosa*, Mich. Flor. 1, p. 7). 2. *J. humilis*, Mich. Flor. 1, p. 8.—Around New Orleans.

DICLIPTERA resupinata, Vahl. Enum. 1, p. 114 (*Justicia brachiata*, Pursh, 1, p. 14). Floribus axillaribus subsessilibus pedunculatisque subverticillatis, bracteis bivalvibus subcordatis, foliis ovatis.—*Hab.* In shady alluvial forests throughout the Arkansas territory; common.—*Obs.* Perennial. Stem erect, low, and considerably branched, hexangular, and on two of the sides grooved, sometimes striking out roots from its base; leaves in full grown plants from one to two inches wide, and five or six inches long, upon longish petioles, and minutely and unequally pubescent; floral branchlets axillary and terminal, the clusters subsessile, irregularly 3 to 6-flowered; bracts concealing the calix, which is simple and very small, with subulate segments; corolla bilabiate, pale violet purple, rather small, lobes oblong, undivided, reflected, and almost equal in magnitude, the upper slightly tridentate at the extremity and maculate at the base, the lower 2-toothed, the tube compressed and contorted; filaments two, diantheriferous; style undivided; capsule suboval, mucronulate, sessile and compressed, the valves membranaceous, attached to a curved cartilaginous border, which springing apart at the summit, becomes straight, divides the valves in the centre and separates them from their base, so as to present an appearance not very dissimilar to the blades of a pair of shears; retinaculum divided, springing upwards, each portion 1 or 2-toothed, but seldom more than 1-seeded; seed orbicular and compressed, brown and hispid.

BIGNONIACEAE.

1. *BIGNONIA capreolata*. 2. *B. radicans*.

CATALPA cordifolia.—On the banks of the Mississippi, near the settlement called the Big Prairie, a few miles below New Madrid, but apparently only naturalized. I have since observed this tree truly indigenous on the banks of the Chatahoochee, near Columbus in Georgia, and pretty frequent in West Florida and Lower Alabama.

MYOPORINEAE.

AVICENNIA nitida?—Near the outlets of the Mississippi, and on the sea islands near the Balize; called improperly, by the fishermen, Mangle.

VERBENACEAE.

1. *VERBENA urticifolia*. The root is said to be a tonic, useful in intermittent fever. 2. *V. hastata*. 3. *V. bracteosa*. 4. *V. stricta*. 5. *V. Caroliniana*. 6. *V. rugosa*, Willd. Enum. 633.

GLANDULARIA, Gmelin. Calix tubulosus quinquedentatus, denticibus setaceis inaequalibus; corollae limbus quinquefidus subaequalis, lobis emarginatis, ore villosus; stamina quatuor; stigma bilabiata; semina quatuor. Foliis trifidis laciniatis oppositis; spica solitaria pedunculata, corolla Buchnerae.

1. *G. Aubletia*. Assurgens, foliis trifidis incisus hirsutis, seminibus laeviusculis (*Verbena Aubletia*, Ait. Kewens, 1, p. 33; Mich. Flor. 2, p. 13; Jacq. Hort. Vind. 2, p. 82, t. 176; *V. longiflora*, Lamareck, Illust. 1, p. 57; Jussieu, Gen. Pl. p. 109; *Buchnera Canadensis*, Lin. Mant. p. 88; *Glandularia Carolinensis*, Gmel. Syst. Nat. 2, p. 920).—*Hab.* Every where common in elevated prairies throughout the Arkansas territory.

2. *G. *bipinnatifida*. Suberecta, hirsuta; foliis trifidis bipinnatifidis, laciniis linearibus, seminibus impresso-punctatis.—*Hab.* On the open calcareous hills of Red river. Flowering in May and June.—*Obs.* Perennial. Leaves trifid, divisions trifidly pinnatifid, somewhat hirsute; bracts subulate, longer than the calix; calix tubular, dentures subulate unequal, the lowest segment very short; tube of the corolla nearly straight, longer than the calix; border large and flat, 5-cleft, lobes obcordate and emarginate, with the orifice villous; stamina four, fertile, didynamous and included; style at length exerted; stigma bilabiate, the lobes unequal; corolla lilac blue, the border equal and similar to that of *Aubletia*, which species the whole plant strongly resembles. These two similar species, with several more South Ameri-

can ones, appear to justify their separation from Verbena, which had formerly been attempted by Gmelin.

ZAPANIA nodiflora.

CALLICARPA Americana.—On the banks of rivers; common.

LABIATAE.

1. *SALVIA lyrata.* 2. *S. Claytoni*, Elliott, Bot. Carol. 1, p. 32.

3. *S. *longifolia.* *Puberula*, foliis lineari-lanceolatis acutis integris, radicalibus villosis serratis; calice trifido, caule pumilo.—*Hab.* In the prairies not uncommon.—*Obs.* Perennial. Nearly allied to *S. azurea*, but bearing flowers of nearly double the magnitude, and of a pale blue. The plant also possesses the fetid odour of *Salvia sclarea*.

1. *MONARDA mollis*, Pursh, 1, p. 18 (*M. altissima?* Muhl. Catal. p. 3).—*Obs.* Stem two or three feet high, brown and glaucous, sometimes pubescent, but with the angles always obtuse; leaves long, ovate-lanceolate, acuminate and deeply serrate, lighter coloured beneath, but very slightly pubescent; bracts cordate-ovate; clusters of flowers single, uncommonly large; calix glandular and smooth, pilose at the summit dentures very short; corolla pale purple (and in one variety white); apex of the upper lip attenuated, remarkably and singularly bearded, so as to be in this way distinguished from every other species.—*Hab.* From Canada to the southern extremity of the Arkansas territory; common.

2. *M. fistulosa*, Willd. Sp. Pl. 1, p. 124; Ph. 1, p. 18.

3. *M. Russeiana.* *Gracilis*, foliis ovato-lanceolatis acuminatis remote serratis brevi petiolatis hirsutis, caule acutangulo, capitulis simplicibus, bracteis coloratis, corollis maculatis.—*Hab.* In shady woods around Fort Smith, Belle Point; common. Flowering in May.—*Obs.* Perennial. Stem about a foot high, angles acute and somewhat hispid; leaves hirsute, lower ones cordate-ovate, serrate; bracts pale red; calix equal, pilose, the segments divaricate, glandular and hispid; corolla white, the lower lip spotted with carmine red and undulated, the apex 3-lobed, middle lobe elongated; tube slender; stamina exerted; anthers at first red, lobes divaricate; stigma simple, subulate.

(**CORYANTHUS*.)† *Corolla ringens*; labio superiore fornicato carinato, apice emarginato, filamentis subaequali; labio inferiore trilobo.

4. *M. *aristata*. Foliis lineari-lanceolatis serratis acutis glabriusculis, floribus verticillatis, corollis maculatis, calicis dentibus longissime aristatis, bracteis coloratis multi-seriatis.—*Hab.* In the plains of Red river, and rarely on the upper part of the Arkansas. Flowering in May and June.—*Obs.* Perennial and annual; stem obtuse-angular, covered with a minute pubescence, the axills commonly bearing clusters of lesser leaves; bracts oblong, purplish-blue, awned and ciliated, consisting of many series; calix cylindric and striated, the orifice closed with villous hairs, the dentures equal with each other, awned, the awns bearded and nearly equal to the length of the calix; corolla almost white, sparingly spotted, and chiefly on the under lip. Allied to *M. punctata*, and with it forming a subgenus, characterized by the carinated upper lip as long as the stamina.

5. *M. punctata*.—Common on the banks of all the larger western rivers, and in old fields.

CUNILA mariana.—From the Cadron to Red river, on woody hills.

1. *HEDEOMA hirta*, Gen. Am. vol. 1, p. 16 (*H. hispida*, Pursh, Flor. Am. Septent. 2, p. 414).—*Hab.* In denudated prairies near Belle Point Fort, Arkansas.

2. *H. *Arkansana*. Caule ramoso; foliis lineari-lanceolatis, antice subserratis, superioribus integerrimis; verticillis subquadrifloris, pedicellis ad basin bibracteolatis; floribus tetrandris.—*Hab.* In moist and rocky prairies near the sources of the Kiamesha river. Flowering in May and June.—*Obs.* Nearly allied to *H. glabra*, and possessing the pennyroyal odour; the whole plant smooth and glandular, four to six inches high; pedicells nearly equal to the cylindric calix, the dentures setaceous; corolla subcampanulate, blue, with the palate white.

COLLINSONIA Canadensis.—Common.

1. *LYCOPUS virginicus*. 2. *L. vulgaris*.

3. *L. sinuatus*, Elliott. Caule simplici; foliis majusculis, omnibus pinnatifidis, laciniis lineari-lanceolatis, acutis, subserratis; calicibus

† From *κόρυς* a helmet, and *ανθος* a flower; in allusion to the characteristic distinction of this section, the galeated upper lip.

acutis.—*Hab.* On the banks of the Arkansas, occasionally inundated. The plant large, and with the axills many-flowered.

NEPETA cataria.—Introduced and naturalized.

1. *HYSSOPUS nepetoides*. 2. *H. scrophulariaefolius*, Pursh, 2, p. 406.

MENTHA borealis, Mich. Flor. Am. 2, p. 2; Pursh, Flor. 2, p. 405.

TEUCRIUM virginicum, Willd. Sp. Pl. 3, p. 22.

GLECHOMA hederacea, Willd. Sp. Pl. 3, p. 85.

LAMIUM amplexicaule, Willd. Sp. Pl. 3, p. 90.

STACHYS aspera, Mich. Flor. Am. 2, p. 5; Pursh, 2, p. 407. 2. *S. hyssopifolia*, Mich. 2, p. 4; Pursh, 2, p. 407.

MARRUBIUM vulgare, Willd. Sp. Pl. 3, p. 111.—Naturalized.

PYCNANTHEMUM incanum, Mich. 2, p. 7; Pursh, 2, p. 409. 2. *P. linifolium*, Pursh, 2, p. 409 (*Brachystemum linifolium*, Willd. Enum. p. 623). 3. *P. virginicum*, Gen. Am. vol. 2, p. 33 (*P. lanceolatum*, Pursh, 2, p. 410). 4. *P. muticum*, Persoon's Synopsis, 2, p. 128 (*Brachystemum muticum*, Mich. Fl. Am. 2, p. 6). 5. *P. pilosum*, Gen. Am. vol. 2, p. 33.

MELISSA officinalis, Willd. Sp. Pl. 3, p. 146.—Naturalized.

CALAMINTHA nepeta, Pursh. Fl. Am. 2, p. 413.—Naturalized.

1. *DRACOCEPHALUM virginianum*, Willd. 3, p. 149, β *album*.—This is the prevailing variety, bearing flowers which are nearly white.

2. *D. *intermedium*. Floribus spicatis remotis, foliis lineari-lanceolatis subdenticulatis, calicibus brevibus.—*Hab.* On the prairies in moist places, from Arkansas to Red river.—*Obs.* A much smaller species than *D. virginianum*, and more nearly allied to *D. denticulatum*, but differs in its acute and partly entire leaves, and the peculiar shortness of the calix; the colour of the flower is of a pale purple, often almost white. Nearly allied to *D. variegatum*, but with a different flower.

CLINOPODIUM vulgare, Willd. Sp. Pl. 3, p. 131; Pursh, 2, p. 410.

ORIGANUM vulgare, Willd.; Pursh, Flor. Am. 2, p. 411.

1. *TRICHOSTEMA dichotoma*, Lin. 2. *T. linearis*, Gen. Am. vol. 2, p. 39.—*Hab.* On the hills of the Cadron, and precisely similar to the eastern plant.

1. *SCUTELLARIA lateriflora*, Willd.

2. *S. parvula*, Mich. Fl. Am. 2, p. 11; Pursh, 2, p. 412.—*Obs.* In

this small and very pubescent species, which is not more than three or four inches high, the root presents moniliform tubers and sends out creeping shoots, the leaves are also subserrate, and the flowers very small. It inhabits the clefts of rocks, in somewhat shady places.

3. *S. versicolor*, β **mollis*.—*Obs.* This variety differs considerably from the common species of the western states, to which I applied the name of *versicolor*, rather than that of *cordifolia*, given to it by Muhlenberg, as there are several other species with heart-shaped leaves. The present variety, for such I consider it, is, like the original species, a plant of rather unusual magnitude in the genus, every where softly pubescent, but not glandular, and with the dentations of the leaves rather acute than obtuse; the flowers are also larger, and nearly of a deep and uniform blue colour.—*Hab.* In the vicinity of thickets on the prairies of Red river; somewhat rare.

PRUNELLA vulgaris, Willd. Sp. Pl. 3, p. 176.

PHRYMA leptostachya, Willd. Sp. Pl. 3, p. 179.

ASPERIFOLIAE.

MYOSOTIS verna, Gen. Am. Appendix.—*Obs.* Perhaps only a variety of *M. arvensis*, but certainly indigenous.

1. *CYNOGLOSSUM officinale*. 2. *C. virginicum*, Lin. Sp. Pl. 134 (*C. amplexicaule*, Mich. Fl. Am. 1, p. 132).

1. *LITHOSPERMUM arvense*, Willd. Sp. Pl.; Pursh, 1, p. 131.

2. *L. *tenellum*. Seminibus glabriusculis convexis, foliis linearibus acutis strigosis, floribus remotis pedunculatis; calicibus foliaceis, laciniis inaequalibus.—*Hab.* In arid places in the prairies of Red river. Flowering in June.—*Obs.* Annual. Stem about a span, slender and somewhat branched, and, as well as the rest of the plant, clothed with short appressed whitish hairs; leaves very narrow, and attenuated at either end; flowers somewhat scattered, small and white; calix 5-leaved, the leaflets of unequal size; corolla funnel-formed, the border 5-lobed, the lobes oblong, at first plaited; orifice pervious; tube slender, roundish, and staminiferous towards the base; stigma small and slightly bifid; nuts four, externally convex and somewhat pilose, internally connivent

and angular, attached somewhat obliquely to the inconspicuous base of the style, and with the umbilicus imperforate. Perhaps not precisely a Lithospermum, bearing indeed some affinity to Cynoglossum, and by no means according with the usual character of the fruit of this genus as described by Roemer and Schultes, in their recent and greatly augmented edition of the Systema Vegetabilium, vol. 4, p. 6.

1. *BATSCHIA Gmelini*, Mich. Fl. Am. 1, p. 130; Pursh, 1, p. 132. —*Hab.* In the woods of Arkansas and Red river. 2. *B. canescens*, Mich. Flor. Am.; Ph. 1, p. 132. 3. *B. longiflora*, which is the Lithospermum angustifolium of Muhlenberg's Herbarium.—*Obs.* All the species of this genus are, with apparent propriety, referred by the celebrated Lehman to the genus Lithospermum.

PULMONARIA virginica, Willd.; Pursh. 1, p. 130.

HELIOTROPIUM curassavicum. Foliis oblongo-lanceolatis carnosis glaucis oppositis alternisque, spicis conjugatis compositisve, caule procumbente. (*H. curassavicum* and *H. chenopodioides*, Humboldt and Bonpland; Willd. Enum. Hort. Berol. 1, p. 175, and Sp. Pl. 1, p. 743.) —*Hab.* On the sandy banks of the Great Salt river, and in similar situations on those of the Arkansas; also on the shores of both the Atlantic and Pacific oceans, chiefly in the tropical regions.

TIARIDIUM. Corolla hypocrateriformis, tubo angulato, fauce coarctata quinqueradiata, limbi laciniis undulatis; stylus brevissimus, stigmatate capitato; nuces 4, biloculares, mitriformes, acuminatae, cohaerentes, basi clausae. Receptaculum commune manifestum nullum. Lehman's *Asperifoliae*, p. 13.

T. Indicum (*Heliotropium Indicum*, Lin.; Willd.; Pursh, 1, page 130.

PURSHIA scabra, Roem. and Schultes, 4, p. 57.—*Hab.* On hills in the prairies of Red river, and on the uplands of the Arkansas; frequent. —*Obs.* Both in this species and *P. hispida*, the segments of the corolla are acute.

**EUPLOCA*.† Calix quinquepartitus; corolla subinfundibuliformis, limbo plano plicato quinquangulato, fauce nuda; genitalibus inclusis;

† From *πλαίσια* to plait; in allusion to the peculiar character of the corolla.

stigma annulata, apice barbata ; semina quatuor, per paria approximata, angulata, basi imperforata obliqua, calici affixa.

Herbacea ; folia aspera alterna ; flores sparsi, limbo plicato convolvulaceo. Messerschmidiae Arguziaequae affinis, sed fructu diversa.

1. *E. convolvulacea*.—*Descript.* Root annual, slightly branched ; stem angular, four to six inches high, sending out a few branches, sometimes both at the base and the summit ; leaves mostly alternate, the lowest ones opposite, and, as well as the most part of the plant, asperate with very scabrous appressed hairs, their form ovate and entire, supported on short petioles ; flowers lateral, approximating and sessile ; calix 5-parted, shorter than the tube of the corolla, the segments linear-lanceolate ; corolla white, externally pilose, about the size and form of that of *Ipomoea coccinea* ; the tube ovate, contracted both at its base and summit, the stamina inserted below its middle ; border flat, plaited and membranaceous, with five angles ; stamina, filaments none ; anthers sessile and connivent, situated towards the middle of the tube, ovate and acute, opening internally, with the membranes of the cells narrowed upwards and diagonally plaited ; style included ; stigma annulate, hirsutely bearded at the apex ; seeds four, hairy, approximating by pairs, externally convex, but flat and smooth at the commissure or point of mutual approximation, with the umbilical hilum situated above the middle of the third and narrowest side of the seed, in immediate connection with the quadrifid base of the style ; receptacle compressed, and at length separated from the base of the style ; cotyledons and radicle incurved towards the umbilicus.

Hab. On the sandy banks of the Arkansas. Flowering in June, the flowers of an agreeable odour, and opening towards sunset, as in the *Mirabilis* ! Perhaps this plant ought to be united with the *Arguzia* of Siberia, which requires ulterior examination ; though from the description of *Messerschmidia incana* of Meyer, said to be closely allied to *Arguzia*, and of the fruit of which a very minute description is given in the fourth volume of the *Systema Vegetabilium* of Roemer and Schultes, page 306, our plant is very essentially and generically distinct.

HYDROPHYLLEAE.

1. *ELLISIA* **microcalyx*. Glabriuscula, decumbens, foliis lyrato-pinnatifidis longe pedunculatis, laciniis paucis (3—5) lateralibus obliquis inciso-dentatis intermedio trifido obtuso; floribus solitariis minutis. (*Hydrophyllum pusillum*, Muhl. Herb.)—Annual. The leaves very slightly hairy, upon long petioles, in three to five divisions; the lateral segments half reniform, toothed, the terminal division nearly entire, but trifid; calix minute; corolla very small, subcampanulate, with five shallow lobes.—*Hab.* In Arkansas, Alabama, &c.

2. *E.* **ranunculacea*. Subhirsuta, caule procumbente; foliis pinnatifidis subquinelobatis, superioribus tripartitis, inciso-dentatis obtusis longe petiolatis; racemis secundis paucifloris.—*Hab.* In the shady humid alluvial forests of the Arkansas, frequent. Flowering in March.

Descript. Annual. Stems diffuse and procumbent, about a span in length; the upper leaves 3-parted, the lateral segments toothed on the lower side (the very reverse of the preceding species), the central segment trifid; racemes 5 to 10?-flowered; flowers upon longish pedicells; corolla pale blue, cylindric-campanulate, naked, segments suboval and entire; germ hirsute.—*Obs.* The leaves, which are much less compound, differently formed, and furnished with conspicuous petioles, readily distinguish this species from the *E. ambigua*.

HYDROPHYLLUM virginicum, Willd. Sp. Pl. 1, p. 814; Ph. Flor. Am. 1, p. 134.

1. *PHACELIA* **hirsuta*. Caule erecto ramoso; foliis pinnatifidis, superioribus sessilibus, segmentis integriusculis; calix, laciniis linearibus patentibus; corolla, lobis integris nudis; filamentis basi barbatis.—*Hab.* In sylvan prairies; common from the Cadron to the garrison at Belle Point, Arkansas. Flowering in April and May.—*Obs.* Annual and perhaps also biennial. The whole plant hirsute and hairy; stem six to twelve inches high, commonly branching from the base; upper leaves not amplexicaule, but closely sessile, pectinately-pinnatifid, the segments of the lower leaves sparingly toothed and obtuse, those of the upper linear and entire; spike simple, rarely bifid; pedicells longer than the

calix; calix hirsute, the segments linear; corolla pelviform-campanulate, purplish blue, 5-grooved, the grooves naked and melliferous; capsule ovate and hirsute, 4 to 8-seeded (the germ 8 to 10-seeded).

2. *P. *glabra*. Erecta; foliis pinnatifidis, superioribus amplexicaulibus ciliatis, segmentis integriusculis; calix, laciniis ovatis; corolla, lobis integris nudis; filamentis basi barbatis.—*Hab.* In humid and elevated woods on the margins of rivulets, near the Dardanelle settlement, Arkansas river. Flowering in April.—*Obs.* Very similar to the preceding; growing, however, not more than five or six inches high. The stem terete and branched from the base; leaves pinnatifid, the lower ones petiolate, the segments, three or four pair, are somewhat incisely toothed and obtuse; the upper ones amplexicaule, pectinately pinnatifid, with the same number of ciliate acute segments; calix subcampanulate, the segments ovate and ciliate; corolla lilac blue, pelviform-campanulate, rather large and externally pilose, semiquinquefid, the lobes suboval; ten purplish spots at the base of the corolla; stamina somewhat exserted, equal with the corolla, bearded at the base; anthers blue; style filiform, bifid; capsule smooth, 4 to 8-seeded.

NEMOPHILA. Calix decemfidus, laciniis exterioribus reflexis; corolla subcampanulata quinquelobata, lobis emarginatis, ad basin foveolis marginatis staminiferis; stamina brevia, filamentis nudis; capsula carnosae unilocularis, bivalvis; semina quatuor.

Herba succulenta annua, caule triquetro; foliis alternis pinnatifidis; pedunculi longissimi uniflori oppositifolii et terminales, subracemosi, racemis incurvis fructibus deflexis; corolla aestivatione convoluta. Hydrophylo affine.

N. phacelioides. Root fibrous, annual, but more commonly biennial; stem fragile, smooth, somewhat tender and diaphanous, plano-convex, twelve to eighteen inches long, branching from the base and decumbent, possessing a tenacious and elastic centre; leaves alternate, pinnatifid, somewhat succulent, and on the upper surface a little scabrous; segments five or six pair, subovate or lanceolate, acute, partly falcate, and presenting a few incisions; petiole ciliated, its internal base lanuginous; peduncles 1-flowered, terete, very long, sometimes near a span, and attenuated towards their extremities, at first remote and coming out opposite the leaves, but at length, as the period of inflorescence advances,

approximating into a kind of raceme, which is primarily curved; calix campanulate, 10-cleft, the segments ovate and acute, ciliate, the larger connivent and erect, the exterior much smaller and reflected; corolla pelviform-campanulate, violet-blue, the lobes oval and naked, obliquely emarginated, before expansion convolute; the exterior base producing ten purple spots, the internal base furnished with five foveolate nectariferous cavities, with tomentose margins bearing the stamina; stamina about half the length of the corolla, the filaments filiform and smooth; anthers sagittate-oblong, brownish-yellow; style one, bifid, below hirsute; capsule oval, covered by the connivent calix, somewhat hirsute, 1-celled, 4-seeded, the seeds by pairs, alternately immersed in a fleshy succulent receptacle, occupying the whole cavity of the capsule.—*Hab.* In the shady woods of Cedar prairie, ten miles from Fort Smith, and from thence in similar situations to the sources of the Pottoe. Flowering in May.

SOLANEAE.

1. *SOLANUM nigrum*, Lin. 2. *S. Carolinense*, Willd. Sp. Pl. 1, p. 1043; Pursh, 1, p. 156.

3. *S. triflorum*.—Towards the sources of the Arkansas, and near the burrows of the American Marmot.—Dr James. In the same situations grew also a hirsute variety.

1. *PHYSALIS pubescens*, Willd. p. 1023; Feuil. Peruv. 3, t. 1 (P. obscura, β pubescens, Mich. Flor. Am. 1, p. 149; Pursh, 1, p. 157?).—According to Father Feuille, the fruit is edible, as in the United States.

2. *P. *pumila*.—*Obs.* Perennial. Somewhat hirsutely pubescent; stem erect, twelve to eighteen inches; leaves ovate-lanceolate, apparently entire and solitary, attenuated down the petiole, which is very distinct; segments of the calix acuminate.—The habit very much that of *Atropa*.

3. *P. *longifolia*. *Glaberrima, caule angulato erecto, foliis solitariis ovato-lanceolatis acuminatis sinuato-dentatis longe pedunculatis, floribus solitariis pendulis.*—*Obs.* Herbaceous; root perennial; stem angular, about eighteen inches high, and branching above; leaves

smooth, four to five inches long, irregularly, sparingly and sinuously toothed; flowers, as usual, yellowish, with five brown blotches towards the base; calix much larger than the berry. It bears much the aspect of *Capsicum annuum*, and, from the diagnosis, appears allied to *P. chenopodifolia*.—*Hab.* On the sandy banks of the Arkansas, near Belle Point. Flowering in June.

4. *P. *mollis*. Tomentosa, incana, foliis geminis subrhomboideo-ovatis cordatisve sinuato-dentatis longe petiolatis undatis, floribus solitariis pendulis.—*Obs.* Perennial and herbaceous, the root creeping, the whole plant covered with a stellate, short and whitish pubescence. About twelve to eighteen inches high, and branching above; leaves below somewhat cordate-ovate, the upper ones ovate, tending to rhomboidal acute, the margin unequally and sinuately toothed; flowers solitary, axillary, ochroleucous; calix inflated, larger than the berry. Before flowering, the plant bears very much the aspect of *Rivina humilis*.—*Hab.* On the sandy banks of the Arkansas. Flowering in June.

DATURA stramonium, Lin.

1. *VERBASCUM thapsus*, Lin.

2. *V. blattaria*, Lin.—*Obs.* There is no species of this genus indigenous to America.

CONVOLVULACEAE.

1. *CONVOLVULUS *hastatus*. Foliis hastato-pedatis sericeis, laciniis intermediis sublanceolatis caeteris multo majoribus.

Descript. Root perennial; stem twining, herbaceous and pubescent; leaves petiolated, on either surface covered with a short, hoary and silky pubescence, the primary ones simply hastate, the rest partly palmated, about two inches long, commonly producing on either side of the base two lateral, reflected and toothed, or almost entire lobes; the central segment more than twice their length, and double their breadth; peduncles solitary, mostly 2-flowered, much longer than the leaves, the pedicells each producing two bracts; segments of the 5-leaved calix externally pubescent, imbricated, oval and obtuse, tinged with purple; corolla rose-coloured?; stigmas two, filiform; capsule 2-celled, cells 2-seeded.—*Hab.* On the high hills of Red river, contiguous to the

confluence of the Kiamesha. Flowering in June.—*Obs.* This plant differs but little apparently from the *C. althaeoides* of the south of Europe and Africa, as described by Linnaeus. Clusius observed this species in Spain and Portugal; it grows also on hills in the vicinity of Naples, and in the adjacent islands and continent.

2. *C. arvensis*, Lin. Sp. Pl. 218; Eng. Bot. t. 312.

3. *C. panduratus*, Willd. Sp. Pl. 1, p. 850.—A variety with entire leaves.

1. *IPOMOEA coccinea*, Willd. Sp. Pl. 1, p. 880; Plumier Pl. Amer. t. 103; Bot. Mag. 221.

2. *I. lacunosa*. Foliis cordatis acuminatis scrobiculatis? basi angulatis; pedunculis subunifloris, flore brevioribus. Lin. Sp. Pl. (Ed. III.) p. 228.—*Obs.* As remarked by Linnaeus, very similar to *I. coccinea*, but with peduncles bearing only one or two pale purple, and in the Arkansas plant, white flowers, short and somewhat campanulate. The leaves are very thin, not scrobiculate (that I can perceive), and with very long acuminate points.—*Hab.* Rather abundant on the banks of Arkansas. Flowering in midsummer and through the autumn.

3. *I. nil* (*Convolvulus nil*, Willd. Sp. Pl. 1, p. 851).

4. *I. tamnifolia*, Willd. Sp. Pl. 1, p. 885.—*Hab.* Banks of the Mississippi.

1. *EVOLVULUS nummularius*, Willd. Sp. Pl.—*Hab.* Banks of the Mississippi.

2. *E. pilosus*. Erectus, foliis lineari-oblongis utrinque sericeo-pilosis, pedunculis unifloris brevibus. Nuttall's Gen. Am. Pl. 1, p. 174 (*E. Nuttallianus*, erectus, foliis oblongis utrinque sericeo-tomentosis, pedunculis unifloris brevibus. Schultes, Syst. Veg. vol. 6, p. 198; *E. argenteus*, Pursh, 1, 187).—*Obs.* Flowers purplish, coming out about the middle of the stem; peduncle shorter than the calix; calix segments partly linear and acuminate.—*Hab.* On the high hills of Red river near Kiamesha.

DICHONDRA repens. Foliis reniformibus emarginatis subtus pubescentibus. Willd. Sp. Pl. 2, p. 1353 (*D. Carolinensis*, Mich. Flor. Am. 1, p. 136).—*Hab.* Banks of the Mississippi near New Orleans.—*Obs.* From an inspection of many specimens, compared with Lamarck's

figure (Ill. t. 183), no difference is discernible, and the leaves of the American plant are more frequently emarginated than otherwise.

CUSCUTA *Americana*, Willd. Sp. Pl. 1, p. 702.

HYDROLEAE.

HYDROLEA **ovata*. Spinosa, puberula, foliis ovatis utrinque acutis, floribus corymbosis laciniis ovatis, calicibus hirsutis.

Descript. Perennial. The whole plant covered more or less with a minute and soft pubescence. Stem about eighteen inches high, herbaceous, branching only at the period of flowering; leaves of the radical shoots almost linear and crowded, those of the stem elliptic, ovate, acute at either end, and entire on the margin; the axills commonly producing slender solitary spines, being apparently so many abortive branchlets; flowers bright blue, crowded towards the summits of the fastigiate branchlets; calix 5-cleft, hairy, the segments linear-lanceolate; corolla pelviform-campanulate, with ovate segments somewhat larger than those of *H. spinosa*, as figured by Aublet; stamens about the length of the corolla; styles filiform, two and three; capsule 2 and 3-valved; seeds numerous and minute.—*Hab.* On the margin of ponds throughout Arkansas.

POLEMONIACEAE.

POLEMONIUM *reptans*, Willd. Sp. Pl. 1, p. 886.—On the banks of the Mississippi; rare.

1. PHLOX *paniculata*, Willd. Sp. Pl. 1, p. 839.
2. *P. maculata*, Willd. Sp. Pl. 1, p. 840.
3. *P. pilosa*, Willd. Sp. Pl. 1, p. 840 (*Phlox aristata*, Mich. Flor. Am. 1, p. 144); Icon. Pluk. Alm. 133, t. 98, f. 1.
4. *P. *glomerata*.
5. *P. reptans*, Mich. Flor. Am. 1, p. 144 (*Phlox stolonifera*, Bot. Mag. 563).

CANTUA *coronopifolia*, Willd. Sp. Pl. p. 879 (*Cantua thyrsoides*, Jussieu in Annales du Mus. 3, p. 119; *Ipomopsis elegans*, Mich. Flor. Am. 1, p. 141; *Ipomeria coronopifolia*, Nuttall's Gen. Am. vol. 1, p.

124).—*Obs.* Differs from *Cantua* merely by the angular seeds.—*Hab.* On the elevated prairies of Red river, where the flowers are of a bright scarlet, and spotted with a deeper tinge of colour.

JASMINEAE.

OLEA Americana, Willd. Sp. Pl. 1, p. 45; *Ic.* Catesb. Carol. 1, t. 61.—*Hab.* On the banks of the Mississippi near New Orleans.

GENTIANEAE.

GENTIANA linearis, Willd. Sp. Pl. 1, p. 1339 (*G. puberula*, Mich. Flor. Am. 1, p. 176).

LISIANTHUS glaucifolius. Foliis ovato-oblongis sessilibus, pedunculis elongatis unifloris, laciniis corollae tubo longioribus. Lamarck, Encyc. p. 660; Jacquin. ic. rar. 1, t. 33; Collect. 1, p. 64.—*Obs.* This plant is so accurately described by Lamarck, that any thing additional is almost superfluous. It is a glaucous, somewhat thick and smooth leaved herbaceous perennial, of low growth, with a terete dichotomously branched stem. The peduncles are long, bearing large funnel-formed and somewhat spreading flowers of a violet purple, considerably darker at the base and within the tube; the segments are very deep, oval and acute, and the calix segments much acuminate; the stigma large, capitate and bilamellate; the capsule 2-celled; the seeds numerous, round and punctate, but without margins. The whole plant, by habit, evidently approaches the genus *Gentiana*.—*Hab.* On the sandy banks of the Great Salt river of Arkansas; rare. It has flowered at Mr William Bartram's botanic garden, Kingsessing near Philadelphia, in September, and appeared to be sufficiently hardy to withstand the climate.

All the species of this genus (twenty-three in Persoon's Synopsis), except two in Madagascar, are indigenous to the islands of the West Indies and the kingdom of Peru.

1. *SABBATIA *campestris*. Erecta, foliis ovatis amplexicaulibus, pedunculis elongatis subfastigiatis, calicibus alatis, laciniis linearibus; corollam 5-partitam superantibus.

Descript. Annual and bitter; stem angular, about one foot high,

branches dichotomous, peduncles few, elongated, and forming a straggling corymb; leaves ovate, amplexicaule and acute, 3 to 5-nerved; calix somewhat longer than the corolla, segments linear-lanceolate, the angles of the junction of the segments salient or alated; corolla roseaceous, about the form and size of *S. angularis*, the segments oboval, the base of the corolla marked with a 5-rayed greenish star; anthers revolute; style one; stigma deeply bifid.—*Hab.* In the open prairies of Arkansas and Red river; common. Flowering in June and July.—*Obs.* Perfectly distinct from *Chironia trinervia* of Ceylon, with which, however, it agrees in the artificial character; but the plant of Ceylon produces oval leaves, acute at both extremities, large blue flowers, and is probably a genuine *Chironia*, a genus not yet discovered in America.

2. *S. angularis*, Pursh, Flor. Am. 1, p. 137.

VILLARSIA lacunosa, Venten. Choix de Plant., p. 9 (*V. aquatica*, Gmelin, Syst. Veg. 447; *Menyanthes trachysperma*, Mich. Flor. Am. 1, p. 126; *Villarsia cordata*, Elliott, Sketches Bot.)—*Obs.* This plant is dioicous and polygamous. In the plant of Mr Elliott, which grows also in the ponds of New Jersey, the leaves are larger and cordate, the stamina effoete, and the stigmas exerted. In the male plant, as commonly observed, the leaves and flowers are smaller, the anthers perfect, the stigmas small, and the germ infertile.

SPIGELIA Marilandica. Lin. Syst. Veg. p. 197; Mich. Flor. Am. 1, p. 147; *Ic.* Curt. Magaz. t. 80.—*Hab.* On the banks of the Arkansas, in the forests near to the first cliffs on the banks of the river.

ASCLEPIADEAE.

1. *ASCLEPIAS debilis*, Mich. Flor. Am. p. 116.—Rather common on the banks of the Ohio and Mississippi.

2. *A. variegata*, Willd. Sp. Pl. 1, p. 1265; *Icon.* Bot. Magaz. 1182; *Pluk.* Alm. t. 77, f. 1.—*Hab.* Near the Cadron settlement.

3. *A. obtusifolia*, Mich. Flor. Am. 1, p. 115.—*Hab.* Near the garrison at Belle Point.

4. *A. quadrifolia*, Jacquin, Obs. 2, t. 23 (*Apocynum umbellatum*

album, latiore folio, tetraphyllon, ex Terra Mariana, Pluken. Mantis. p. 16).—*Hab.* Near Belle Point Fort.

5. *A. parviflora*, Willd. Sp. Pl. 1, p. 1267 (*Apocynum petraeum ramosum*, salicis folio venoso, siliqua medio tumente, Virginianum, Phyt. t. 261, f. 3, mala).—*Hab.* Common along the banks of the Ohio and Mississippi.

6. *A. verticillata*, Mich. Flor. Am. 1, p. 116; *Icon. Pluk. Mant. t. 336, f. 4.*—*Hab.* Near the Cadron settlement.

7. *A. tuberosa*, Willd. Sp. Pl. 1, p. 1273; *Icon. Dillen. Hort. Eltham. t. 30, f. 34.*—*Hab.* Common both in the prairies of the Arkansas and Red rivers. Sometimes nearly scarlet.

*POLYOTUS† (*Acerates*, Elliott).‡ Corolla rotata reflexa; lepanthium simplex, quinquepartitum, lacinae ovatae concavae absque corniculis basi inauriculatae. Genitalia Asclepiadis, Gompholobio affine, habitu et fructificatione Asclepias.

1. P. **heterophyllus* (*Asclepias viridiflora*, Pursh, Flor. Am. 1, p. 181). Villosus, erectus, foliis oppositis oblongo-ovatis plerumque acutis, umbellis globosis caulinis; lepanthium antheridio subaequale.

Descript. Root perennial; stem herbaceous, simple, terete; leaves opposite, very shortly petiolate and somewhat rigid, varying in figure from ovate to oblong or elliptic, and either obtuse or acute, subhirsutely villous, a little scabrous and undulated on the margin, three inches long, by about one and a half inches broad, reticulately veined and pectinately nerved, the nerves confluent below the margin; umbells extra-axillary, dense and globose; bracts subulate; calix segments linear-lanceolate, acute; corolla rigidly reflected, segments oblong, acute, greenish; lepanthium (or nectary, L.) 5-parted, segments linear-oblong, nearly equal with the antheridium (or staminal crown), of a purplish green colour, closely appressed, concave, and scarcely auriculate at the base, devoid of awns, originating separately from the base of the antheridium; fissures of the antheridium angularly salient near the summit; cusps small and membranaceous; pollinia (masses of pol-

† From πολὺς many, and ὄψις, ἄτρυς an ear, from the empty and auriculate form of the lepanthia or nectaries.

‡ This name has been already employed for another genus.

len) even, longish stipitate, partly club-shaped, cereaceous and hyaline, deciduous, alternating in the receiving cells; follicles two, smooth and even; seeds comose, and attached as in *Asclepias*.—*Hab.* From Fort Smith to Red river, on rocks and in dry prairies. Flowering in June. Mr Pursh found this species from Pennsylvania to Virginia. Professor Ives discovered the same plant near New Haven, and likewise described and figured in Silliman's Journal, a lanceolate leaved variety, which he then supposed to be a new species, but which he afterwards justly regarded as a mere uncertain variety; the leaves of this species varying from oval to ovate, lanceolate and oblong, and are either flat, undulated, smooth or pubescent. The plant of Arkansas differs from that of New Haven more constantly in the colour of the lepanthium, which is somewhat brown instead of yellowish green.

2. *P. lanuginosus* (*Asclepias lanuginosa*, Nuttall's Gen. Am. vol. 1, p. 168). Decumbens, foliis ovatis sparsis, umbellis subsolitariis terminalibus.—*Obs.* Root tuberous; stem four to six inches high; flowers greenish. A dubious species, and requires re-examination in a living or more perfect state.—*Hab.* On dry and gravelly hills, about thirty miles below the confluence of White river with the Missouri.

3. *P. longifolius* (*Asclepias longifolia*, Mich. Flor. Am. 1, p. 116; *Acerates longifolia*, Elliott, Sketches Bot. p. 317). Puberulus, caule suberecto, foliis sparsis praelongo-linearibus acutis, umbellis caulinis pedunculatis; lepanthium stipitatum antheridio brevius, folliculis villosis.—*Obs.* Perennial and herbaceous. Stem two to three feet high, slightly pubescent; leaves half an inch wide and half a foot long, scabrous on the margin, the nerves confluent below the margin, midrib beneath pubescent; umbells many, subglobose, loose; bracts subulate; pedicells pubescent, nearly an inch in length; flowers smaller, greenish, petals obscure purple at the summit, reflected; segments of the lepanthium oblong, concave, with a purplish line near the base, shorter than the antheridium, stipitate below, and distinctly inserted; clefts of the antheridium salient at the summit; cusps membranaceous; follicles two, villous, rostrate.—*Hab.* On the margins of ponds, and in places overflowed by winter rains, from Illinois and Missouri to Red river. Flowering in June. Also in swamps near the Atlantic sea coast, from Sussex county in Delaware (*v. v.*) to Georgia.

4. *P. *angustifolius*. Caule erecto, foliis linearibus sub-oppositis, umbellis caulinis subsessilibus; lepanthium antheridio sublongius, sessile, foliolis apice tridentatis.

Descript. Perennial. Stem simple, herbaceous and slender, the lower part naked, about eighteen inches high; leaves very long, narrow and acute, somewhat revolute and scabrous on the margin, one to one and a half lines wide, opposite and alternate, nerves confluent below the margin; umbells globular, small, three or four to eight; pedicells about the length of the flowers; flowers greenish, with a mixture of white; segments of the corolla oblong, reflected; lepanthium sessile, divisions linear, longer than the antheridium, tridentate above, the central denture minute, concave and auriculate below; clefts of the antheridium salient from the base to the summit; cusps broad and membranaceous, concealing the stigma; follicles two.—*Hab.* In dry prairies from Fort Smith to Red river. Flowering in June.—*Obs.* This species appears to be very nearly related to *Gomphocarpus*, and also very nearly to *Asclepias*, particularly *A. cinerea*, from which it merely differs in the absence of the short internal awn; it may, however, be considered as present in the central, acute and shorter third denture of the segments of the lepanthium.

Dubious Species. 5. *P. obovatus* (*Asclepias obovata*, Elliott, Sketches, p. 321). Foliis obovatis mucronatis, subtus tomentosis; umbellis subsessilibus; lepanthium antheridio duplo longius.—*Hab.* In Georgia.

ANANTHERIX, Nuttall, Gen. Am. vol. 1, p. 169. Corolla subcampanulata quinquefida; lepanthium simplex, quinquelobum, lobis compressis vacuis incurvatis laminula ab apice interiori auctis; antheridium superius interdum pedicellatum. Caetera *Asclepias*.

Caulis erectus, herbaceus; folia alterna aut opposita, subverticillata, interdum axillis spinulosis; flores magni umbellati aut subpaniculati, terminales; folliculi muricati aut laeves. Calotropis affine.

1. *A. viridis* (*Anantherix viridis*, Nuttall, Gen. Am. vol. 1, p. 169; *Asclepias viridis?* Walter, Flor. Car. p. 107; *Asclepias connivens*, Baldwin in Elliott's Sketches, p. 320; *Podostigma viridis*, Elliott, p. 327). Foliis oppositis sessilibus obovatis oblongis mucronulatis glabri-

usculis, umbellis caulinis subpaniculatis paucifloris, lepanthii laciniis longissimis.—*Hab.* In damp pine barrens near St Mary's.

2. A. **paniculatus* (*Asclepias viridis?* Walter, p. 107; Pursh, 1, p. 183?). Foliis sparsis ovato-oblongis obtusiusculis mucronulatis; umbellis divisis subpaniculatis; lepanthium corolla duplo brevius; folliculis muricatis.

Descript. Perennial. Stem angular and smooth, one to two feet high; leaves scattered, numerous, ovate-oblong, shortly petiolate, nearly smooth with the margin scabrous, four or five inches long and one to one and a half broad, axills and summits of the petioles producing minute and soft spines; umbells several, terminal, rather loose, branching and few-flowered, with the flowers fastigate; peduncles about an inch long; calix small, appressed, 5-parted, segments linear-lanceolate; corolla subcampanulate, deeply 5-cleft, divisions large and ovate, externally depressed lengthways along the centre, at all times connivent and erect, colour yellowish-green; lepanthium contiguous with the corolla, 5-lobed, variegated purple and white; lobes compressed, obtusely carinate, hollow and rounded, and thickened at the summit, with the folds closed, an internal thickish lamella arising near the internal summit closing the fold and longitudinally adnate; there are also five intercalary, obtuse and somewhat crustaceous dentures interposed betwixt the lobes of the lepanthium; antheridium roundish, obtusely pentagonal, the lateral fissures situated within the salient angles; the usual membranaceous cusps obsolete; stigma thick and discoid, pentagonal; pollinia disposed as in *Asclepias*, the masses somewhat scymitar-shaped, their stipes articulated; follicles two, muricated with soft spines; seeds comose.—*Hab.* In Cedar prairie near Fort Smith, and also near Red river. Flowering in May.

3. A. **decumbens*. Foliis sparsis suboppositis ovato-lanceolatis prae-longis acutis; umbella subglobosa terminali; lepanthium corollae subaequale.

Descript. Perennial. Stems numerous, simple, decumbent, somewhat angular, twelve to eighteen inches long, and crowded with shortly petiolated, long and lanceolate leaves, acute and scabrous on the margin. The general aspect is similar to the preceding species, but the umbell is solitary, terminal and crowded; peduncles pubescent, about an inch

long; calix as in the preceding; segments of the corolla the same colour, but shorter, scarcely covering the brown lepanthium, of which the segments are very patulous and incurved, and exceed the antheridium in length; the chasms of the antheridium are remarkably salient, angular and crustaceous; with the follicles I am unacquainted.—*Hab.* On dry hills near the confluence of Kiamesha and Red river. Flowering in July.

Subgenus. *STYLANDRA*. Laminulae lepanthii nullae; antheridium pedicellatum; folliculi laeves.

4. *A. (S.) pumila* (*Stylandra pumila*, Nuttall, Gen. Am. vol. 1, p. 170; *Podostigma pubescens*, Elliott, Sketches, 1, p. 326; *Asclepias pedicellata*, Walt. p. 106; Pursh, 1, p. 182). Foliis linearibus suboppositis sessilibus, corollae laciniis lepanthio subtriplo longioribus.—*Hab.* In dry pine barrens, Effingham county, Georgia, Elliott. Near St Mary's, Dr Baldwin. Near Charleston, Mr Fraser.—*Obs.* This genus, which will probably prove abundant in species, is very nearly allied to the *Calotropis* of R. Brown, but differs essentially in the insertion of the lepanthium and the form and character of its segments.

ENSLLENIA, Nuttall, Gen. Am. vol. 1, p. 164. Corolla quinquepartita erecta; lepanthium simplex quinquepartitum petaloideum planum truncatum, laciniis in filum bifidum desinentibus; stigma conica subbilamellata. Caetera *Asclepias*.

Herba volubilis; folia opposita; flores umbellati.

E. albida, Gen. Am. (loc. cit.).—*Hab.* Near Fort Smith and other places along the banks of the Arkansas. Found also on the banks of the Potomac, and on the banks of the Scioto and Ohio, &c.